



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

NAVMC 3500.14
C 4610
3 Jul 07

NAVMC 3500.14

From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) PROGRAM MANUAL

Ref: (a) MCO 3500.14

Encl: (1) AVIATION T&R PROGRAM MANUAL

1. Purpose. To revise training standards and regulations regarding the training of Marine Corps aircrews, Marine Air Command and Control System (MACCS) operators, Airfield Emergency Services and Meteorological and Oceanographic (METOC) personnel per reference (a).

2. Information. This revision, having undergone a comprehensive restructure, includes upgrades to the following major categories.

a. A requirement to implement community Functional Check Flight (FCF)/Contract Simulator Instructor (CSI) workup and evaluation syllabi.

b. A requirement to implement Simulator Mission Essential Subsystems Matrices (MESM).

c. Clarification of individual training policy.

d. Incorporation of Aviation Ground Community Terms and policies.

e. Incorporation of Core METL workshop guidance.

f. Tiltrotor LAT policy.

g. Incorporation of USMC policy regarding the Naval Aviation Pilot Production Process (NAPP)

h. Adjustments to community T&R format.

3. Recommendations. Recommended changes to this Manual are invited and may be submitted via the appropriate chain of command to: Commanding General, Training and Education Command, Aviation Training Branch via e-mail (refer to http://www.tecom.usmc.mil/atb/contacts_.htm) or the Defense Message System using the following plain language address: CG TECOM QUANTICO VA ATB.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

4. Reserve Applicability. This Manual is applicable to the Marine Corps Total Force.

5. Certification. Reviewed and approved this date.


GEORGE J. FLYNN
By direction

DISTRIBUTION: PCN 10033195000

Copy to: 7000260 (2)
8145001 (1)

CONTENTS

CHAPTER

1	AVIATION T&R PROGRAM
2	TRAINING POLICIES
3	AVIATION TRAINING RULES OF CONDUCT
4	CORE SKILL INTRODUCTION TRAINING
5	T&R ADMINISTRATION
6	T&R SYLLABUS STRUCTURE

APPENDIX

A	GLOSSARY OF TERMS
B	LIST OF ACRONYMS/CODE DESIGNATIONS
C	MISSION AND INSTRUCTOR DESIGNATIONS AND QUALIFICATIONS
D	MISSION ESSENTIAL TASK-BASED CORE MODEL REPORT
E	CORE COMPETENCY RESOURCE MODEL (CCRM) GUIDELINES

CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

	<u>PARAGRAPH</u>	<u>PAGE</u>
PURPOSE.	100	1-3
MARINE AVIATION T&R PROGRAM	101	1-3
T&R PROGRAM APPLICABILITY	102	1-5
MARINE CORPS AVIATION TRAINING COMMUNITIES	103	1-6
T&R CORE COMPETENCY MODEL	104	1-7
AUTOMATED TRAINING MANAGEMENT SYSTEM	105	1-9
DEVIATIONS FROM T&R MANUAL PROGRAM	106	1-10

FIGURES

1-1	CORE COMPETENCY MODEL SUPPORT TO COCOMS AND HQMC	1-4
1-2	UNIT CORE SKILL PROFICIENCY REQUIREMENTS EXAMPLE	1-9
1-3	UNIT COMBAT LEADERSHIP REQUIREMENTS EXAMPLE	1-9
1-4	INSTRUCTOR REQUIREMENTS EXAMPLE	1-9

NAVMC 3500.14
3 Jul 07

CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

100. PURPOSE

1. The Marine Aviation Training and Readiness (T&R) program develops unit warfighting capabilities by providing commanders with standardized programs of instruction for training all aviation aircrew, Marine Air Command and Control System (MACCS) operators and maintainers, Airfield Emergency Services (AES), Airfield Operations Specialists (AOS), and Meteorological and Oceanographic (METOC) personnel through community T&R syllabi. This T&R Program is based on Unit Training Management (UTM) principles and performance standards designed to ensure units attain and maintain proficiency in core skills and combat leadership.
2. UTM is the application of the Marine Corps Training principles and the Systems Approach to Training (SAT) to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and form the basis for the development of this directive. Familiarity with MCRP3-0A will enhance understanding of SAT used in T&R development and Marine Corps UTM principles.
3. An effective T&R Program is the first step in providing the Marine Air-Ground Task Force (MAGTF) commander with an Aviation Combat Element (ACE) capable of accomplishing its stated missions. The T&R program is the fundamental tool used by commanders to construct and maintain effective training programs. This Manual provides policy for development and standardization of all USMC Aviation T&R manuals.
4. Marine Aviation plays a crucial role in the MAGTF's ability to conduct maneuver warfare. The ultimate goal of Marine Aviation is to attain and maintain combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The Aviation T&R Program Manual represents the collaborative effort of Marine Aviation Subject Matter Experts (SMEs) who design training standards to maximize combat capabilities. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aviation personnel attain and maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained crews remain ready, relevant, and fully capable of supporting the MAGTF commander.

101. MARINE AVIATION T&R PROGRAM

1. General. The Aviation T&R Program implements a comprehensive, capabilities-based training system. This system provides core skill proficient crews and combat leaders to MAGTF and combatant commanders. The Marine Aviation T&R Program aligns with DoD and Joint requirements and guidelines. The Aviation T&R Program prescribes training standards required to fulfill operational requirements of combatant commanders and captures T&R resource requirements for HQMC planning and

budgeting. The Marine Aviation T&R Program position in the overall operational and support system is depicted in figure 1-1.

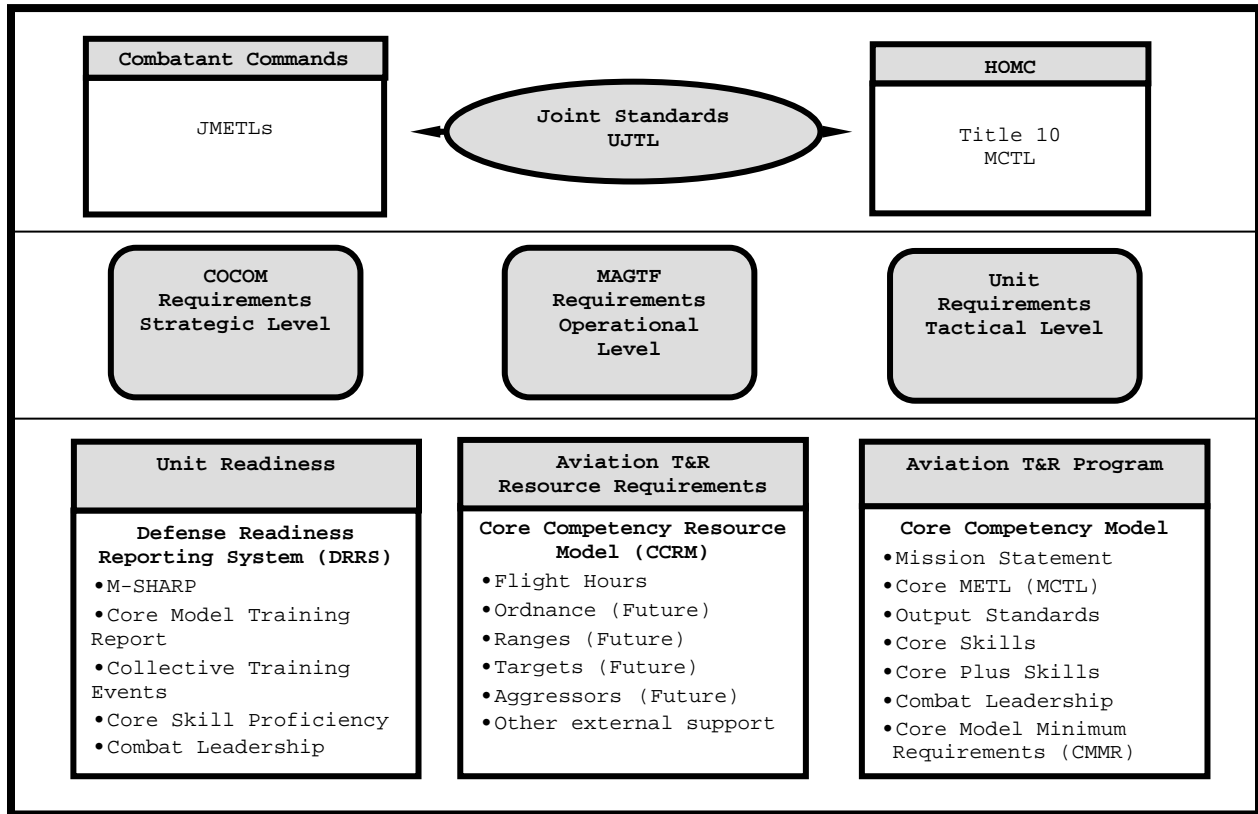


Figure 1-1.--Core Competency Model Support to COCOMs and HQMC.

2. Readiness and Resources

a. Readiness. The 2000 Secretary of Defense Annual Report to the President and Congress stated, "In response to legislation of DoD internal review, the Department undertook an extensive and collaborative process to enhance the current readiness reporting system." The DoD established the Defense Readiness Reporting System (DRRS), a capabilities-based, adaptive, near real-time readiness reporting system to make readiness reporting more objective, timely, and accurate.

(1) DRRS. The DRRS is the DOD system of record for unit readiness reporting. Reporting is based on unit capability to accomplish specific tasks, within an established Mission Essential Task List (METL) providing a common baseline for unit readiness reporting. Each Mission Essential Task has one or more associated standards which are used as reporting criteria in DRRS. These standards reflect measured outputs from unit core capabilities as well as core skills associated with each MET. (DoD Directive 7730.65, OSD DRRS Serial Two Guidance 10 Aug 2005). These measurable outputs are the demonstrable link between METs and readiness reporting.

(2) Additionally, the Marine Aviation Campaign Plan 2002 directed that aviation readiness reporting transition from a focus on individual readiness to a unit readiness construct. Once "collective training events" are developed and incorporated into the Marine Aviation T&R Program, we will fulfill the vision of a comprehensive, capabilities-based, unit-centric training system.

(3) CG TECOM ATB has developed a report (Appn D) for reporting training readiness that is suitable for the unit level to gain a clear picture of unit training status with respect to core skill proficiency and combat leadership. This report is called the Core Model Training Report (CMTR) and will be developed for use within the M-SHARP training management system. The M-SHARP system will evaluate unit training readiness based upon logged data and the core model premise of crew attainment and maintenance of proficiency in community-determined core skills and combat leadership and will display that data via the CMTR.

(4) Marine-Sierra Hotel Aviation Readiness Program (M-SHARP). Marine Aviation requires a web-based state-of-the-art training management system capable of deployment and detachment operations both afloat and ashore. Tailored to the Marine Aviation T&R and flexible enough to account for the realities of Marine Aviation scheduling and logging challenges, M-SHARP provides the training management software tool for scheduling and logging T&R event completion data, for comparing the logged data to community readiness metrics, and for formatting readiness data in concert with T&R Program Manual guidance.

b. Resources. The Core Competency Resource Model (CCRM) identifies the external resources needed to attain and maintain a desired level of readiness for a unit. The CCRM (Flight Hour subset), accredited by the Chief of Naval Operations and the Commandant of the Marine Corps was primarily developed for HQMC level budgetary support for the Flying Hour Program. At the unit level it may complement the Sortie Based Training Program (SBTP) by assisting units in the identification of flight hour resources needed to train the unit to core competency. Though originally designed to support the Flying Hour Program, it has been expanded and will include the following external resources in the near future: ordnance, indirect fire assets, ranges, targets, aggressor air, external loads, and ground assets (Helicopter Support Teams, convoys, radar support etc.). In time, aviation ground unit resource needs will also be included.

102. T&R PROGRAM APPLICABILITY

1. The Marine Aviation T&R Program is applicable to all Marine Air Groups, Marine Air Control Groups, and Marine Wing Support Groups, and Marine Corps Air Stations where CG TECOM(ATB) maintains administrative oversight of applicable T&Rs. The Aviation T&R Program facilitates competency in individual skills essential to perform unit combat missions. The development of individual skills provides the foundation for unit core competency. The intent of the remainder of this chapter is to describe basic tenets of the Aviation T&R Program to facilitate a general understanding of the program.

2. T&R Program Orders/Directives. The T&R Program consists of one Marine Corps Order (MCO 3500.14), this Navy Marine Corps Publication (NAVMC 3500.14), and a series of other NAVMC Publications (community T&R manuals) that document the Aviation T&R Program. See Chapter 5 for a table of Aviation T&R manuals.

a. MCO 3500.14. The Aviation Training and Readiness Program order establishes USMC policy, procedures and direction regarding the training of specified Marine Corps Aviation personnel.

b. NAVMC 3500.14. The Aviation Training and Readiness Program Manual (this Manual) provides policy and standardization for community aviation T&R manuals.

c. NAVMC 3500.XX Series. Community aviation T&R manuals contain individual training syllabi for applicable MOSs within a community. Aviation T&R manuals must comply with NAVMC 3500.14 (this Manual) and may contain policy unique to a community/MOS if consistent with this Manual. These manuals are reviewed and

updated on a triennial basis. Aviation Training Branch (ATB) at Quantico, Virginia is responsible for the administrative management of all aviation T&Rs.

103. MARINE CORPS AVIATION TRAINING COMMUNITIES

1. Tactical Flight Communities. Subdivided into 3 categories:

<u>Fixed Wing</u>	<u>Aircraft</u> AV-8B F/A-18 KC-130FRT KC-130J EA-6B
<u>Rotary Wing</u>	<u>Aircraft</u> AH-1W UH-1N CH-46 CH-53 (D&E) AH-1Z UH-1Y
<u>Tiltrotor</u>	MV-22

2. Support Aircraft. Those fixed-wing or rotary-wing aircraft acquired and/or retained exclusively for Operational Support Airlift (OSA), as well as any other DoD owned or controlled aircraft used for OSA purposes:

<u>Operational Support</u>	<u>Aircraft</u> C-12 C-9 C-20 UC-35
<u>Adversary Support</u>	F-5E/F/N
<u>Search and Rescue Support</u>	HH-46 HH/UH-1

3. Aviation Ground Communities

a. For the purposes of this Manual, Aviation Ground communities include:

<u>Command</u>	<u>Agency</u>
<u>Marine Air Control Group</u>	
Marine Tactical Air Command Sqdn (MTACS)	Tactical Air Command Center (TACC)
Marine Air Control Sqdn (MACS)	Marine Air Traffic Control (MATC)
	Tactical Air Operations Center (TAOC)
Marine Air Support Sqdn (MASS)	Direct Air Support Center (DASC)
Low Altitude Air Defense Bn (LAAD)	Low Altitude Air Defense (LAAD)
Marine Unmanned Aerial	Unmanned Aerial System (UAS)
Vehicle Squadron (VMU)	

Marine Wing Support Group

Marine Wing Support Sqdn (MWSS)

Aviation Ground Support Operations Center (AGSOC)
Meteorological and Oceanographic (METOC)
- personnel also organic to MEF commands.
Airfield Emergency Services (AES)

Marine Corps Air Station

Air Traffic Control

Airfield Services

Air Traffic Control (ATC)
Airfield Operations Specialists (AOS)
Airfield Emergency Services (AES)
Meteorological and Oceanographic (METOC)

b. Additional Aviation Ground Training Guidance

(1) Aviation Ground personnel assigned to a Marine Air Control Group, a Marine Wing Support Group, or a Marine Corps Air Station shall be trained per the Marine Aviation T&R Program and the applicable T&R manual.

(2) Aviation Ground personnel are often assigned Fleet Assistance Program (FAP) or Temporary Additional Duty (TAD) assignments in order to provide additional training opportunities. Gaining commands shall provide training for FAP/TAD Marines within the provisions of the applicable T&R manual, as able. For example, an Air Traffic Controller is assigned FAP/TAD to a nearby Marine Corps Air Station for air traffic control duties; the gaining Air Station shall continue training the FAP/TAD controller per the ATC T&R Manual, and record the Marine's training in M-SHARP so the parent unit may track the Marine's progress for SORTS/DRRS purposes. In another example, an Air Traffic Controller is assigned FAP to the station for lifeguard duty. In this case, the station is not able to continue training per the ATC T&R Manual.

(3) Aviation Ground personnel may be assigned to a unit outside the scope of the Aviation T&R Program Manual. In such cases, the gaining command should, if possible, continue to train the Marine per the provisions of the Marine Aviation T&R Program and the applicable T&R manual. For example, a METOC Marine may be assigned to a MEF billet. The MEF does not fall within the scope of the Marine Aviation T&R Program, but does have the ability to train and record a Marine's progress in M-SHARP. The MEF should make the effort to continue the Marine's T&R progression, as that progression will provide an increased capability to the MEF.

104. T&R CORE COMPETENCY MODEL

1. The foundation of every T&R program is the Commandant of the Marine Corps approved core competency model. The core competency model, or simply "Core Model," establishes the basic structure around which each Aviation T&R program is created.

(a) The essential elements of the Core Model include the unit Mission Statement and Core Mission Essential Task List (METL), the Core METL Output Standards, the community-specified Core Skills, and associated Core Model Minimum Requirement (CMMR). The Core Model, contained in the opening chapters of each specific T&R manual, links each of these Core Model essential elements providing training traceability from Mission, Core Skill, and combat leadership requirements to individual events.

(b) A Core Competent Unit (CCU) meets unit mission requirements as established within the community Core Model. In accordance with the community Core Model, a CCU maintains the desired number of Core Skill proficient crews and combat leaders

identified in the Core Model Minimum Requirement (CMMR) as defined in paragraph 104.5 below.

(c) The Core Model standardizes both unit and individual training requirements and establishes the basic structure around which each T&R Manual is created. All community Aviation T&R manuals follow the Core Model structure but the requirements and metrics housed within the structure are tailored to the specific needs of the community. Chapter 6 provides additional detail regarding the Core Model.

2. Mission Statement/Mission Essential Task List (METL)

(a) Mission Statement. The mission statement contains tasks each like-unit shall accomplish during combat or contingency operations.

(b) Core METL/Core Skills Matrix/Output Standards

(1) The Core METL is a standardized list of tasks for which a unit was designed or organized. Selected tasks are drawn from the Marine Corps Task List (MCTL) and are standardized across all like type entities (OSD DRRS Serial Two Guidance 10 Aug 2005)

(2) The METL/Core Skills matrix provides the link between the unit training program and its METL by graphically depicting how each Core Skill supports each MET in the unit METL.

(3) Core METL Output Standards reflect the level of performance a unit must be capable of sustaining during contingency/combat operations by MET.

3. Core Skills. Core skills are specific mission-related task areas that support a community's METL and consist of like T&R events (200-300 level). The Core Model requires individual and unit proficiency in 200-300 level core skills in order to perform all tasks in the unit METL and to execute Output Standards.

4. Core Plus Skills. Core Plus Skills have a low probability of execution, or are theater specific. Core Plus training (400 T&R level) is generally not considered essential to achieve unit core competency.

5. Core Model Minimum Requirements (CMMR). CMMR is determined by individual T/M/S or agency T&R conference SMEs and describes the required number of core skill proficient crews and combat leaders for a unit to execute its MET(s) within the expectations of the Output Standards. Unit CMMR is reflected in the T&R core model tables and is based on two metrics: Minimum Unit Core Skill Proficiency (CSP) Requirements, and Minimum Combat Leadership Requirements as shown in the table examples below.

a. Crew Definition. Each core skill requires a defined crew makeup of core skill proficient individuals. In the below example, the CH-46E community determined that a standard crew for each core skill consists of two Pilots, one Crew Chief, and an AG/O.

b. Unit CSP Requirements. Unit CSP is defined in terms of minimum numbers of individuals or crews (for communities employing crew served platforms/systems) required to be proficient in each Core Skill, as depicted in the below example. Crews count towards this requirement upon meeting T&R CSP requirements.

CH-46E CMMR (Unit CSP Requirements)				
CORE SKILL	SQDN Pilots	SQDN Crew Chiefs	SQDN AG/O	SQDN Crews
FAM/INST	16	8	8	8
CAL	16	8	8	8
EXT	12	6	6	6
FORM	16	8	8	8
TERF	16	8	8	8

Figure 1-2.--Unit Core Skill Proficiency Requirements Example.

c. Combat Leadership Requirements. Unit Combat Leadership is defined in terms of minimum numbers of tactical leaders required to execute the unit METL. Individuals count towards this requirement upon designation in writing by the commanding officer. The figure below provides a generic example of combat leadership requirements.

CMMR (Unit Combat Leadership Requirements)	
DESIGNATION	SQDN Pilots
HAC	12
SEC LDR	6
DIV LDR	4
FLT LDR	2
AMC	2
FCP	4

Figure 1-3.--Unit Combat Leadership Requirements Example.

d. Instructor Requirements. Unit Instructor Requirements are defined in terms of minimum numbers of instructors required to replenish the cadre of core skill proficient crews every year. Individuals count towards this requirement upon designation in writing by the commanding officer, as depicted below.

CMMR (Instructor Requirements)	
DESIGNATION	SQDN Pilots
NATOPS	12
Instrument	6
TERFI	4
NSI	2
WTI	2
AGI	4

Figure 1-4.--Instructor Requirements Example.

105. AUTOMATED TRAINING MANAGEMENT SYSTEM. Squadrons are required to maintain, track, and report unit CMMR data per this Manual and MCO 3125.1. Unit CMMR data is maintained and tracked utilizing the authorized training management software: Marine - Sierra Hotel Aviation Readiness Program (M-SHARP). For more information see <http://msharpsupport.com> and paragraph 202.3.

106. DEVIATIONS FROM T&R MANUAL PROGRAM. CG TECOM ATB is the approval authority for deviations from Aviation T&R policy delineated in this Manual and individual aviation T&R manuals. Requests for T&R policy deviation shall be requested via message traffic to CG TECOM QUANTICO VA ATB, via the operational chain of command with info notification to the syllabus sponsor. During contingency/combat operations, MAGTF or wing commanders may deviate from Aviation T&R training policies at their discretion. Information concerning waivers that may be approved by unit commanding officers is contained in Chapter 2.

CHAPTER 2
TRAINING POLICIES

	<u>PARAGRAPH</u>	<u>PAGE</u>
TRAINING POLICY	200	2-3
UNIT TRAINING REQUIREMENTS	201	2-3
INDIVIDUAL TRAINING REQUIREMENTS	202	2-9
TRAINING AND PERFORMANCE RECORDS MANAGEMENT	203	2-18

NAVMC 3500.14
3 Jul 07

CHAPTER 2

TRAINING POLICIES

200. TRAINING POLICY

1. Purpose. To provide policy and direction regarding unit and individual training requirements and standards to include readiness reporting, Programs of Instruction (POIs), Core Skill Proficiency (CSP) management, and training and performance records management.
2. Commanders must be cognizant of the numerous factors affecting unit training to include:
 - a. Efficiency. Time and resources expended are measurements for training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.
 - b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.
 - c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.
3. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this directive. Attendance at formal aviation courses enhances the warfighting capabilities of the unit.

201. UNIT TRAINING REQUIREMENTS

1. Unit Training Guidance

- a. Core Model Minimum Requirement (CMMR). Commanders shall conduct operational training according to the applicable community T&R manual. Units shall train to achieve CMMR. If a unit falls short of CMMR, squadron/battalion commanders must refocus unit training to achieve CMMR. Units shall track unit CMMR utilizing the authorized aviation training management software; M-SHARP.
- b. Qualifications and Designations. Units shall train to achieve T&R required qualifications and designations that support core competency requirements. Unit instructor designations shall be balanced with unit needs and mission requirements. The number of instructors (WTI, ACTI, LATI, TERFI, NSI, etc.) produced shall be strictly controlled and must significantly increase a unit's ability to train for combat over the long term. Tactical flight squadron commanding officers shall justify in writing and obtain the respective MAG commanding officer written approval prior to training instructors in excess of listed T&R instructor requirements in respective T&R manuals (this does not apply to aviation ground units). Squadron CO/XO instructor designations do not count toward unit instructor requirements.
- c. Weapons and Tactics Training Program (WTPP). The WTPP supports training programs by providing instructor and academic standardization for T&R syllabi. As the manager of the WTPP for the Marine Corps, Marine Aviation Weapons and Tactics

Squadron One (MAWTS-1) produces standardized courseware to support community T&R syllabi as well as the maintenance of syllabi for advanced instructor designations, to include the Weapons and Tactics Instructor Course.

2. Unit Training Standards

a. Unit training standards are criteria that specify mission and functional area unit tasks and proficiency standards for combat, combat support, and combat service support units. Unit training standards consist of Collective Training Standards (CTS) or Mission Performance Standards (MPS). Aviation MPS are delineated in Marine Corps Combat Readiness Evaluation System (MCCRES) manuals. MCCDC plans to incorporate CTS into aviation T&R manuals in the future. Unit training standards are derived from unit METLs and directly relate to unit core competencies.

b. T&R CTS (when approved) or the MCCRES may be utilized as the aviation unit evaluation standard. To maintain congruity in Marine Corps Aviation and Marine Corps Ground T&R programs, CG TECOM is coordinating an update to the aviation unit evaluation mechanism. The goal is to replace MCCRES MPS with T&R CTS and utilize the T&R as a single source unit training and evaluation mechanism. The implementation concept is to create a separate chapter in all aviation T&R manuals that contains unit CTS in the form of unit events. Unit T&R evaluation will be an event in the future, completed by the individual unit or higher headquarters. CG TECOM (ATB) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved.

c. Individual and unit training standards are inextricably linked and should be concurrently reviewed and updated.

3. Unit Readiness Reporting

a. Commanding officers report the status of readiness and training per the current edition of the Marine Corps Readiness Reporting Order (As of this publishing date, Marine Corps SORTS Manual, MCO P3000.13).

b. As an aid to operations officers, the Core Model Training Report (Appendix D) displays unit readiness in terms of Core Skill Proficiency and Combat Leadership. The CMTR captures Aviation T&R Program readiness guidance in a form suitable for unit level consumption and in a form that clearly delineates the link between METs and the T&R Program construct.

4. Unit Proficiency Policy. The following areas of unit training require proficiency to ensure combat readiness. The unit, as an entity, must meet certain minimum standards and levels of proficiency to enable mission completion in these critical areas.

a. Carrier Qualification. When required to operate from aviation decks, units shall maintain both day and night shipboard qualification. When aviation decks are not available, these units shall maintain ship skills by staying current with Field Carrier Landing Practice (FCLP) in accordance with their respective T&R syllabus. Personnel should consult the NWP, LHA/LHD, CV, LSO, individual aircraft NATOPS manuals, and current NAVAIR instructions to ensure appropriate training of personnel for shipboard operations.

b. Fixed Wing Expeditionary Airfield (EAF)/Forward Site Training and Qualification. Fixed wing tactical squadrons shall qualify on an available EAF/forward site, or on a runway configured for EAF/forward site operations when required. Each aircraft wing and fixed wing tactical group shall assign a Landing Signal Officer (LSO)/Landing Site Supervisor (LSS) to monitor the EAF/forward site training and qualification program. KC-130 operations do not require an LSO/LSS.

The LSO will maintain data on available EAFs/forward sites and air stations where EAF/forward site operations are available. EAF/forward site training should incorporate Expeditionary Air Traffic Control capabilities of the MATC Detachment, or MATC Mobile Team participation whenever feasible.

c. LSO Qualification. Commanding officers shall designate field-qualified LSOs per the LSO NATOPS and assign them at the squadron and group level to control FCLP periods. If possible, the LSO shall be field EAF-qualified. A VSTOL LSS should serve as a supervisor for VSTOL operations from all forward sites. LSOs/LSSs shall brief all aircrew on current launch and recovery publications prior to EAF/forward site training. Aircrews shall be FCLP/forward site qualified prior to EAF/forward site operations and day EAF/forward site qualified prior to night qualification. During EAF/forward site qualification, all pattern work will be flown under VMC.

d. Missile/PGM Training. Commanders shall ensure those aircrews participating in live fire exercises (T&R event) have demonstrated proficiency in their weapons system. Commanders shall assign a qualified and experienced officer to control all missile firing exercises.

e. Tactical Aircrew/C2 Integration Training. Tactical aircrews should integrate with command and control agencies when the opportunities exist. In addition to the command/information exchanges with Air Traffic Control agencies necessary for safe and coordinated launch and recovery, aircrews should coordinate with Tactical Air Operation Centers (TAOC) and Direct Air Support Centers (DASC) (or their joint counterparts) whenever possible to train the command/information exchanges necessary for airspace battle management and coordinated close air support. This coordinated training maximizes the training leveraged from each flying event for both flying platform and aviation ground communities.

f. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. In that, large exercises may not always offer sufficient training opportunity for all crew members, and in many cases do not offer sufficient latitude to refine capability upon arrival, the MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Master Scenario Events List (MSEL) items to exercise and analyze system integration, crew coordination, and critical information flow wherever possible. Tactical Digital Information Link (TADIL) capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

g. Surface-to-Air Missile Training. Stinger gunners assigned to an active battalion in the operating forces should fire at least one surface-to-air missile during a three-year period. Commanders shall ensure those members participating in live missile firing exercises have completed appropriate T&R prerequisites as outlined in the applicable syllabus. Commanders shall assign a qualified and experienced officer to control all missile-firing exercises. All missile firings should be conducted under conditions which closely simulate actual conditions expected to be encountered in the tactical environment (within applicable safety and range constraints), and include the participation of other elements of the MACCS whenever possible.

h. ACE Battlestaff Training. Respective MAWs shall solicit and coordinate TACC training for the Aviation Battlestaff. Training should occur on a periodic basis and should be conducted in accordance with the TACC T&R and MAWTS-1 course catalog.

i. First Tour Assignment. Naval Aviators (NA), Naval Flight Officers (NFO), and air Crew Chiefs (CC), shall be assigned to an operational squadron for a minimum of 2 years (optimally 3 years) after completing Core Skill Introduction phase training. Commands shall not assign NAs/NFOs/CCs outside the squadron unless such assignment is a T&R syllabus requirement.

5. Simulator Policy

a. Fielding of Aviation Training Systems (ATS) Tactical Environment Network (TEN), along with ATS organizations across Marine Aviation that schedule and manage aviation training systems, provides an opportunity for communities to incorporate networked training (multiple training devices linked together and/or Input/Output stations) and Scenario Based Training (SBT) into their T&R syllabus. Current MV-22 and proposed AH-1Z/UH-1Y T&Rs incorporate networked training events. Networked training requirements now and in the future need to be captured throughout T/M/S and agency T&Rs.

b. Simulators provide the capability to develop and hone critical skills required for professional development within an MOS. The development of simulator training events for each T&R syllabus will help maintain valuable combat resources while reducing training costs.

c. If available, annual instrument and NATOPS evaluations should be completed in the simulator under the supervision of an appropriately designated evaluator.

d. Each tactical flight and MACCS community (see Para 103) shall develop a simulator-specific Mission Essential Subsystem Matrix (MESM).

(1) General. Events designated by an "S" in the event header shall be flown/conducted in a training device equipped to meet the objectives listed in the event description; each event requires specific simulator capabilities. For each individual event, a simulator is categorized as Full Mission Capable (FMC), Partial Mission Capable (PMC), or Non-Mission Capable (NMC) based on the status of mission essential simulator subsystems. The following definitions apply:

(a) FMC. All simulator subsystems required to meet the training objectives for the event to be flown/conducted are installed and operating properly.

(b) PMC. A simulator subsystem or capability considered highly desirable, but not essential, to meet the training objectives is not installed or is not operating properly. While the event can still be completed, the quality of training is degraded.

(c) NMC. The device lacks the capability to complete the event due to a critical subsystem or capability being inoperative or not installed. A simulator will be considered NMC if its configuration is greater than 3 months out of date as compared with the current aircraft/system configuration.

(2) Simulator Mission Essential Subsystems Matrix (MESM). Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Commanding Officers shall be notified of all scheduled events in NMC simulators. Each commanding officer should notify DC/Aviation APW-71/APC [Info appropriate MCI/MARCORBASE, CG TECOM ATB and PMA-205(MARFED)] by DMS message (via the applicable chain of command) when NMC simulators due to aircraft configuration changes occur for greater than six months or when in the commanding officer's judgment the NMC rate has had an adverse effect on the squadron's ability to train.

(3) Simulator MESM Application. A MESM illustrates how the absence of a particular simulator subsystem or capability affects simulator MC status (see paragraph 603.15 for additional MESM information). All simulator events will be completed in a FMC or PMC simulator as determined by the MESM. Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Under no circumstances will an event be completed in a device determined to be NMC for that event without the approval of the commanding officer.

(4) Motion. Motion systems significantly enhance training quality and are always preferred if available. Allocation of full motion simulators shall favor the Core Skill Introduction phase due to the fundamental nature of this training.

(5) Tactical Environment. Events designated as "S-TEN" require an approved tactical environment simulation capable of introducing both semi-autonomous threats and moving models controllable from the tactical operator station.

(6) Networked Simulation. Events designated as "S-TEN+" require an approved tactical environment simulation and at least one additional, networked, man-in-the-loop simulator to meet the training objectives. A moving model controlled from the operator station does not satisfy the man-in-the-loop requirement.

(7) Database Selection. Gaming areas should be selected based on their ability to best meet the training objectives for the event.

(8) Briefing. Simulator event briefs shall be identical, both procedurally and in content, to aircraft/system event briefs. The length of the brief should be based upon the mission to be flown/conducted and content to be covered, and should not be forced to fit into the standard simulator briefing period.

(9) If the simulator is not available, simulator periods may be flown in the aircraft or conducted on the system.

(10) Scheduling. The time between a simulator event and the corresponding aircraft/system event should be minimized to the maximum extent possible.

6. Academic/Ground Training. Each unit shall conduct specific training for technical and tactical subjects which complement the respective training syllabus. Personnel shall complete supplemental courses of instruction prior to event training as outlined in individual T&R syllabi. The MAWTS-1 Course Catalog contains a detailed academic curriculum designed to facilitate T&R progression training. This curriculum shall be used to support each T&R syllabus (flight and aviation ground). Units shall instruct courses in the following areas:

a. Technical Subjects. This includes aircraft/weapon systems, maintenance systems, ordnance manuals, and aviation ground equipment operation and maintenance.

b. Tactical Subjects. This includes tactical manuals, T&R policies, ANTTTPs, NWP, MCWPs, NBC defense, ordnance delivery/effectiveness, weapons platform/effectiveness publications, mission planning and briefing.

c. Instrument Flight and Navigation. This includes special equipment, computers, FLIP publications, OPNAV instructions, DR navigation, and map reading.

d. Safety/NATOPS. Safety training requirements exist to familiarize all personnel with methods of hazard detection and avenues available for reporting their existence to appropriate authorities. Continuous training relating to

safety, publications, aircraft mishap briefs, aviation physiology survival equipment, pre-mishap plans, OPREP reporting, NATOPS publications, and systems manuals will increase a unit's safety awareness and improve overall personnel readiness.

e. Intelligence. Threat situation, aircraft recognition, map reading, charts, aerial photographs, enemy aircraft and aerial tactics, enemy anti-air weapons, intelligence reports, enemy electronic warfare capability, and enemy chemical, biological and radiological capability shall be studied regularly.

f. Air Control. This includes mission, capabilities, limitations, and functions of each of the MACCS elements. Instruction should incorporate principles and guidelines associated with employment of the MACCS, and the specific procedures associated with control of aircraft and missiles. Air Control training for aircrews should emphasize the interaction between command and control systems and aviation platforms performing specific missions, to include the interrelationships between specific core competencies of applicable T/M/S and associated command and control procedures, systems and functions.

g. Emergency Procedures. All aircrew and LAAD gunners shall complete a monthly review of emergency procedures. Simulators should be used. If the community lacks a simulator or one is not available, the command shall substitute appropriate examinations or cockpit drills for the emergency procedures review.

h. Mission Planning Systems. Aviation communities shall ensure standardized, automated mission planning system training is embedded into T&R syllabi. This training should be integrated appropriately into phase and stage training. For additional information regarding mission planning systems, contact:

NAVAIRSYSCOM PMA-281 (Mission Planning Systems USMC Fleet Liaison)
DSN: 757-7974
Commercial: (301) 757-7974

SPAWAR (PFPS/TOPSCENE/JMPS)
DSN: 442-8086
Commercial: 1 800 759-1263
c4ihd@nosc.mil
c4ihd@philly.navy.smil.mil
<https://lifeline.spawar.navy.mil>

7. External Policy Requirements. Aviation training requirements listed in other applicable publications that shall be adhered to include:

a. MCBUL 1200 (MOS Manual). Specifies MOS school and training requirements.

b. OPNAVINST 3710.7 (NATOPS General Flight and Operating Instructions). Specifies Naval aviation training requirements (NATOPS Program, instrument ratings/qualifications, Naval Aviation Survival Training Program, etc.).

c. MCO P3500.12 (Marine Corps Aviation Weapons and Tactics Training Program). Specifies 7577/7277 MOS and listed T&R instructor training requirements.

d. DOD Instruction 1300.21 (Code of Conduct Training and Education) and Joint Pub 3-50.3 (Joint Doctrine for Evasion and Recovery). Specifies Survival, Evasion, Resistance, and Escape (SERE) training requirements.

e. OPNAVINST 1542.7 [Crew Resource Management (CRM) Program]. Specifies Crew Resource Management training requirements (applicable to flight units only).

8. Unit Training Plans. The unit Core Model provides training officers with the foundation to develop training plans. With clear unit training requirements delineated, training officers have the ability to produce viable training plans. Units should use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

202. INDIVIDUAL TRAINING REQUIREMENTS

1. Individual Training Philosophy. Individual training and the mastery of Core Skills (200-300 level events) serve as the building blocks for unit combat readiness. Individual training programs are based upon a logical progression of increasingly challenging events, with the requirement for periodic revalidation of individual skill proficiency.

2. Program of Instruction (POI) Assignment. A POI is a group of events within a syllabus that an individual is required to perform; a POI may be thought of as a subset of a T&R syllabus. Personnel shall train to the appropriate T&R MOS* POI described below.

** NOTE - A T&R syllabus normally applies to an MOS, skill designator, or unique crew position within a community. For the purpose of this publication, the term 'MOS' will be used; however, use of this term includes applicable skill designators/crew positions.*

a. Basic/Transition/Series Conversion POIs

(1) Basic

(a) Initial accession personnel shall be assigned to the Basic POI of the applicable T&R syllabus.

(b) Model Conversion personnel (personnel converting from one model aircraft/system to another within the specific aircraft/unit type e.g., CH-46 to CH-53 or EA-6 to FA-18), shall be assigned to the Basic POI of the applicable T&R syllabus.

(c) Conversion training for NFOs is defined as syllabus instruction designed to convert an NFO's primary MOS from one aircraft to another, regardless of type. NFOs undergoing conversion training shall be assigned to the Basic POI.

(2) Transition. Personnel changing aircraft or platform type. Marine Corps aircraft types include the following: Fixed Wing jet, VSTOL jet, Rotary Wing, Fixed Wing Transport, and Tiltrotor. Marine Corps MACCS unit types include: TACC, TAOC, DASC, LAAD, UAS and MATC. Personnel selected for Transition training shall be assigned to either the Basic or Transition POI.

(3) Series Conversion. Personnel converting from a particular series of aircraft or weapons system to a new series that has significantly different aircraft or weapons systems characteristics shall be assigned to either the Basic or Series Conversion POI. USMC Series Conversion aircraft include KC-130FRT/KC-130J, CH-53D/CH-53E, UH-1N/UH-1Y, AH-1W/AH-1Z, CH-46/HH-46D/HH-46E.

(4) POI assignment for personnel selected for Transition/Model Conversion/Series Conversion training shall be delineated in individual community T&R manuals.

(5) Transition/Conversion Applications. Candidates submit applications for NA/NFO Transition/Conversion training per MCO 1331.2, Transition/Conversion Training for Marine Naval Aviators and Naval Flight Officers. Transition or Conversion training for all aircrew, including members of the Selected Marine Corps Reserve (SMCR), will be approved by CMC [DC AVN (ASM)]. DC AVN (ASM) shall coordinate proposed Transition and Conversion FRS training requirements with CG TECOM (ATB). This does not apply to aviation ground communities.

(6) Basic/Transition/Series Conversion POI Completion. When an individual assigned to the Basic, Transition, or Series Conversion POI has attained individual CSP in all Core Skills for that POI, the individual shall be re-assigned to the Refresher POI of that MOS.

b. Refresher POI

(1) Assignment to Refresher POI

(a) Personnel who complete the Basic, Transition, or Series Conversion POI shall be re-assigned to the Refresher POI of that MOS.

(b) In some cases, individuals who have completed a full tour in an MOS billet and return to an operational unit in the same MOS billet may not have completed their assigned B/T/SC POI. In these cases, such individuals shall be assigned to the applicable Refresher POI.

(2) Refresher POI Requirements

(a) Individuals assigned to the Refresher POI are required to maintain proficiency in Maintain Table T&R events of that syllabus.

(b) Individuals assigned to the Refresher POI who have a delinquent status in all events in a Core Skill (with a measurable re-fly interval) are required to complete all 200-300 level R-coded events in that Core Skill.

(c) Individuals assigned to the Refresher POI are required to complete Basic POI events that have never been completed.

(d) T&R events may be waived for individuals assigned to the Refresher POI per paragraph 202.4.

(3) Maintaining/Regaining Proficiency

(a) Maintaining Proficiency. Individuals who have been re-assigned to the Refresher POI from a Basic/Transition/Series Conversion POI in the same tour should have a proficient status for most 200-300 level T&R events. Such individuals should complete Maintain Table T&R events to maintain Core Skill Proficiency. Recognize that such individuals may have a delinquent proficiency status for some R-coded events; such events should be re-completed as required.

(b) Regaining Proficiency. Individuals returning to an operational force billet and assigned to the Refresher POI will normally have a delinquent status for most 200-300 level T&R events. Such individuals shall complete all 200-300 level R-coded events to regain Core Skill Proficiency. Once proficiency is regained, these individuals complete Maintain Table T&R events as required to maintain Core Skill Proficiency.

(4) FRS Refresher Training. 100 level FRS Refresher training is prescribed for pilots and NFOs who have not flown the model aircraft within specified time intervals. Upon completion of Core Skill Introduction Refresher Training, pilots and NFOs shall be assigned to the Refresher POI conducted at the tactical squadron.

Pilots and NFOs shall complete Core Skill Introduction Refresher Training per paragraph 405.

c. Event Sequencing. Personnel should be scheduled to complete T&R events of a POI in sequential order.

d. Prerequisites. A prerequisite is a requirement that must be successfully completed prior to commencing another training requirement unless otherwise stated in a community T&R. Omitting or skipping prerequisites is prohibited (unless the prerequisite is waived by the commanding officer/commander per paragraph 202.4).

(1) The requirement to complete a prerequisite should not be confused with the training requirement to maintain proficiency in an event.

(2) For example, NS-200 has a refly interval of 180 days and is the prerequisite for NS-201. An individual who has completed NS 200 has met the prerequisite requirement to perform NS-201, regardless of the event proficiency status of NS-200. Therefore, an individual with a delinquent proficiency status for NS-200 has met the prerequisite requirement (previously completed NS-200) for 201; however, the training requirement still exists for the individual to update NS-200 per paragraph 202.3.

3. Event Proficiency. Individuals must demonstrate competency in the skill requirements of specified events during regular time intervals. The T&R term 'event proficiency' refers to how recently an individual has demonstrated competency in an event in relation to the event's refly factor. Proficiency dates for each T&R code shall be maintained for each crewmember. Individual event proficiency is calculated and tracked using the automated training management system - M-SHARP.

a. Refly Factor. Refly factor establishes the maximum time between syllabus events requiring a specific skill wherein the unit can expect the average crewmember to maintain their acquired level of proficiency for that event. Specified T&R events have a refly interval, measured in number of days/months, which indicates the period within which the event must be re-performed or updated. Events that have no refly interval have a one time training requirement and are noted by an asterisk (*) in the refly column of the syllabus matrix.

b. Event Proficiency Status. Proficiency is a measure of achievement of a specific skill. Refly factors establish the maximum time between demonstration of those particular skills. The proficiency status for a given individual and T&R event is either 'Proficient,' 'Delinquent,' 'Never Been Attempted (NBA),' or 'Incomplete.' Note that event proficiency status applies to both an individual and an event within the applicable MOS T&R syllabus.

(1) 'Proficient' means the individual has successfully performed or updated an event within the refly interval (e.g. successfully completed and logged the event into the training management system). For example, the refly for event EXT-221 is 365 days and a pilot successfully performed EXT-221 60 days ago. The pilot has a 'proficient' status for EXT-221 and the pilot's proficiency status for that event will remain 'proficient' for the next 305 days.

(2) 'Delinquent' means the individual previously completed the event, but has exceeded the refly interval for that event without executing it or updating it. If an aircrew exceeds the refly factor for a particular event, the individual loses CRP credit for that particular event. To continue with the example above, if the pilot does not perform EXT-221 (or the event is not updated) in the next 365 days, the pilot's proficiency status for EXT-221 will become delinquent.

(3) 'Never Been Attempted' (NBA) indicates the individual has never attempted to complete the event.

(4) 'Incomplete' means the individual was scheduled and attempted to complete the event but did not complete all event requirements.

(5) An individual's proficiency date for an event is the most recent date that event was last completed or updated. Proficiency dates apply to each crewmember in a unit and are listed for each T&R code in the applicable MOS T&R syllabus. Proficiency status changes from day to day; therefore, measurement of proficiency status must be accomplished for a specific date, or "reference date" (usually "today"). For example, a proficient status indicates that the number of days/months between the proficiency date and the reference date is equal to or less than the refly interval. When scheduling, the reference date used to produce proficiency status should be the date of the schedule, usually "tomorrow" or "Monday."

c. Event Proficiency Updating. Event proficiency dates shall be updated when an event is: (1) Successfully completed; (2) Updated via chaining; (3) Updated via POI updating; or (4) Waived. Event proficiency updating applies to 200+ level events.

(1) Event Completion. Event completion is predicated upon demonstrated proficiency. When an individual successfully accomplishes the requirements of an event per the performance standards, the individual should log completion of the event (enter the appropriate T&R code) in M-SHARP. When the event is entered into M-SHARP, the individual's proficiency date for that event is automatically updated to reflect the date the event was completed.

(a) When supervising individual events, unit instructors/leaders shall ensure that trainees demonstrate proficiency per T&R standards prior to logging successful event completion. Evaluating individual proficiency in an event normally requires both objective and subjective assessment. If an individual fails to accomplish the requirements of an event per the performance standards, the individual should not log that event and the proficiency status for that event remains unchanged.

(b) The proficiency date for an Incomplete event is not updated.

(c) Multiple Event Logging. There may be opportunities for crewmembers to accomplish the requirements of more than one event during a scheduled training evolution. Units are encouraged to take advantage of complex training opportunities that allow multiple event completion. Under all circumstances, post-event logging of events (single or multiple) is allowable if the requirements for each event are accomplished per the performance standards.

(2) Chaining. When a T&R event is logged, the proficiency dates of other T&R events (lower in number) may be updated. A T&R code that is logged is known as the chaining code, and the updated codes are chained codes. Chained codes are not always updated when a chaining code is logged. Specific rules may determine when codes are updated via conditional chaining (see Chapter 6). The chaining column in the T&R syllabus matrix delineates which events may be updated, but only those events that are already proficient are chain-updated. Delinquent, NBA, or Incomplete events shall not be updated in chaining. Chaining always applies regardless of the POI an individual is assigned to.

(3) POI Updating. POI updating is applicable only to individuals assigned to T/SC/R POIs.

(a) Transition/Series Conversion POI Updating. Event updating occurs by T&R stages. When all T/SC events in a stage are successfully completed, all remaining events in that stage are updated regardless of their proficiency status (Proficient, NBA, Incomplete, and Delinquent chained events are all updated).

(b) Refresher POI Updating. Event updating occurs by T&R stages. When all R-coded events in a stage are successfully completed, all remaining events in that stage that are proficient or delinquent are updated. NBA and Incomplete events are not updated and must be completed in addition to R-coded events.

(4) Waived Event. See paragraph 202.4.a.

d. Regaining Event Proficiency. If an individual has previously completed an event, but has a delinquent proficiency status for the event, the individual is required to complete the event with another crewmember/flight lead proficient in that event. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

e. Combat Readiness Percentage (CRP). CRP shall be tracked for each crewmember assigned to a unit. CRP is computed as the sum of event CRP values that each individual maintains a proficient status in, to a hundredth of a percent.

4. Syllabus Training Exceptions. Waiving or deferring syllabus events or prerequisites shall only be authorized by unit commanding officers when a training exception is warranted. Waived and deferred events/prerequisites shall be annotated in Individual Performance Records. NATOPS and OPNAV requirements shall not be deferred or waived unless authorized by the respective publication. Paragraph 400.5 policy applies for Core Skill Introduction training event deferrals/waivers.

a. Waived Event. Only unit commanding officers may waive T&R events. Events may only be waived for individuals undergoing Transition/Model Conversion/Series Conversion training, or for individuals assigned to the Refresher POI. Event waivers are valid throughout the duration of the refl interval. Waived events must be annotated in the Individual Performance Record (IPR).

(1) When an event is waived, the individual's proficiency date for that event shall be manually updated in M-SHARP and the individual remains proficient through the respective event refl interval.

(2) T&R events that have not been completed by initial accession personnel shall not be waived. The exception is when a simulator/training device is not available or non-mission capable, commanders may waive simulator/simulated events or conduct simulator events in an aircraft/live. For simulator events that are prerequisites to a flight/live event, the simulator events should be flown/conducted in an aircraft/live.

(3) Entire stages of training shall not be waived. Individuals should complete the R-coded events, or at a minimum, the check flight/evaluated event shall be completed in each stage. Waiving events within a stage does not require a request for T&R policy deviation. Waiver of complete stages of training requires authorization from CG TECOM ATB via message.

b. Deferred Events. Commanding officers may defer events when the lack of logistical support or training assets does not allow event completion in a timely manner. Deferred events are temporary training exceptions and shall be completed when logistical support or training assets become available. Event proficiency status shall not be updated for deferred events. NATOPS or training officers shall annotate deferred events in individual IPRs until the event is successfully completed.

c. Waived Prerequisites. Commanding officers may waive prerequisites when, in their judgment, the prerequisite waiver does not pose an unacceptable safety risk.

5. T&R Syllabus Evaluation Procedures. Establishment of standardized evaluation procedures provides commanders with an effective management tool to improve training and monitor personnel progress.

a. Syllabus Evaluation Forms. Communities shall develop evaluation forms for all events contained in their T&R syllabus. These evaluation forms shall be placed in T&R manuals as an appendix or shall be maintained by the syllabus sponsor. If maintained by the syllabus sponsor, the forms shall be kept electronically and shall be made available to the Marine Corps Total Force. Evaluation forms shall be used for each phase of training by instructors and evaluators to measure the accomplishment of training goals.

b. Events shall be documented per the following instances:

(1) Completion of events flown for the first time (initial 'X'), even if assigned to a Refresher or similar POI, shall be documented with a T&R evaluation form as follows:

(a) All crewmembers assigned or re-assigned to a POI undergoing Core Skill Introduction, Core Skill Basic, Core Skill Advanced, Core Plus phases (100-400 series event codes). This shall include all crewmembers initially assigned to the Basic POI and all crewmembers re-assigned to the Refresher, Modified Refresher, Safe-for-Solo, Transition, and Series Conversion POIs.

(b) All crewmembers undergoing Instructor Training (500 series event codes). This includes all work-up and evaluation events contained within the T&R, MAWTS-1 Course Catalog, or as required by other governing directives.

(c) All crewmembers undergoing designation training to include work-up and evaluation events for Combat Leadership Designations.

(2) E-Coded Events. An event "E-coded" in the T&R Matrix is required to be evaluated and documented each time the event is executed. Normally, there is no requirement to document satisfactory performance during subsequent event completions. However, more frequent documentation may be mandated at the discretion of a specific community. For example, this could include execution of Combat Leadership requirements at specific intervals or the employment of selected ordnance and unique occurrences as determined by the syllabus sponsor. Therefore, events that require subsequent or periodic evaluation shall be "E-coded." For example, F/A-18 SMEs may determine that an ordnance event with a refly factor of 180 days must be documented with an evaluation form. In this instance, the event would be designated as an E-coded event in the syllabus matrix.

(3) All events where performance was evaluated as 'unsatisfactory.'

c. Completed event evaluation forms shall be maintained in Individual Performance Records (IPR).

d. Evaluation documentation for NATOPS and Instrument check events are governed by the OPNAV 3710 series.

6. Individual Core Skill Proficiency (CSP) Management. Management of individual Core Skill Proficiency (CSP) and Combat Leadership is critical to achieve unit CMMR.

a. Individual CSP is a 'yes/no' status assigned to an individual by Core Skill. When an individual attains and maintains CSP in a Core Skill, the individual counts towards CMMR Unit CSP requirements for that Core Skill.

b. To achieve Individual CSP in a Core Skill, an individual must simultaneously have a 'proficient' status in all of the events listed in the CSP Attain Table for that Core Skill. After attaining Individual CSP, an individual must maintain a 'proficient' status in all events in the CSP Maintain table for that Core Skill.

c. After achieving CSP in a given Core Skill, that individual loses CSP when any of the Maintain CSP table events becomes delinquent for the given Core Skill. To regain CSP the individual must re-complete delinquent events. If an individual goes delinquent in all CSP events in a Core Skill, the individual regains CSP by re-completing all R-Coded events within that Core Skill.

Individual CSP Example - Confined Area Landings (CAL). A pilot is either 'CAL CSP' or 'not CAL CSP' per the below:

Individual CSP Attain Table	
Pilot	CAL
T&R event requirements to attain CSP	230R 231R 232 330R 331 332R
R = Refresher POI event S = Event conducted in simulator	

Attaining Individual CSP in CAL: In order for an individual to be counted as CAL CSP, the individual must simultaneously have a 'proficient' status in all of the CAL events listed in the CSP Attain Table (230, 231, 232, 330, 331, 332). Normally this equates to the day the individual completes the last event in the Core Skill event sequence (332); however, there may be occasions where an individual has successfully completed all events in the CSP Attain Table but the individual has gone delinquent in lower level events. In such cases the individual must re-complete delinquent events in order to simultaneously have a 'proficient' status in all of the CAL events listed in the CSP Attain Table. (This example demonstrates the updating process for the Basic POI. For Transition or Series Conversion, see the POI-Updating section in para 202.3.c.(3).

Individual CSP Maintain Table	
Pilot	CAL
T&R event requirements to maintain CSP	230R 330R 332R
R = Refresher POI event S = Event conducted in simulator	

Maintaining Individual CSP in CAL: When an individual has attained individual CSP in CAL, 'CAL CSP', the individual is required to maintain a 'proficient' status in all CAL core skill events in the CSP Maintain Table (230, 330, 332) in order to count towards unit CMMR.

(Aircraft T/M/S or System) CMMR (Unit CSP Requirements)			
Core Skill	SQDN PILOTS	SQDN Crew Chiefs	SQDN Crews
CAL	24	12	12

Tracking Individual CSP in CAL: As long as the individual maintains a 'proficient' status in all of the CAL events listed in the CSP Maintain Table, the individual counts towards Unit CAL CSP requirements (the individual is 'CAL CSP'). If the individual goes delinquent in any of the CAL core skill events in the CSP Maintain Table (230, 330, 332), the individual will not count towards Unit CAL CSP requirements (the individual is 'not CAL CSP') until the delinquent CAL event(s) listed in the CSP Maintain Table are updated.

Individual CSP Attain Table	
Pilot	CAL
T&R event requirements to attain CSP	230R 231R 232 330R 331 332R
R = Refresher POI event S = Event conducted in simulator	

Regaining Individual CSP in CAL: A pilot returns from a FAC tour. The individual is assigned to the Refresher POI. The individual has previously completed all 200-300 level CAL events in his last squadron tour; however, those events have a delinquent proficiency status (individual is 'not CAL CSP'). The individual is required to complete the R-coded 200-300 stage CAL events (230, 231, 330, 332) in order to regain CAL proficiency. The day the individual simultaneously achieves a 'proficient' status in all of the CAL R-coded events listed in the CSP Attain Table, the individual is 'CAL CSP.' Maintaining Individual CAL CSP remains the same as the above Basic POI example.

7. Individual Training Plans. Unit training officers should use individual CSP status and training progression models as baselines to manage individual training plans. When developing individual training plans, training officers/NCOs should consider a variety of factors to include unit CSP status, unit instructor requirements, unit training plans, etc. Training officers/NCOs shall provide personnel with an estimated schedule of upcoming training events to the maximum extent possible. Effective training management allows unit personnel enough lead-time to adequately plan for all upcoming evolutions.

8. Certification, Qualification, and Designation Management. All certification, qualification, and designation requirements shall be delineated in community T&R manuals. Commanders may issue qualification or designation letters when individual personnel successfully complete all training requirements and have been certified for that qualification or designation. A copy of these letters shall be included in section three of the IPRs per paragraph 203. Only after successfully completing qualification or designation requirements and being issued a qualification or designation letter signed by the commanding officer will an individual be considered qualified or designated. Training officers should utilize training progression models as a baseline for scheduling individual qualification and designation training. All individual qualifications and designations are command-specific.

a. Certification. A certification refers to the evaluation process conducted during syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency of a crewmember as a prerequisite to qualification or designation. For aviation ground communities, a certification serves to ascertain one-time proficiency evaluation for a given position.

b. Qualifications. Qualifications are assigned to personnel based on demonstration of proficiency in a specific skill. All qualifications are assigned one or more T&R events related to that qualification, known as qualification events. When an individual completes all qualification requirements to include qualification events, the individual may be granted the respective qualification by the commanding officer. The individual proficiency status of these qualification events are used to determine qualification status. An individual's qualification status may be either "Qualified" or "Not Qualified" for a given qualification.

(1) Loss of Qualifications. If an individual that was once granted a qualification goes delinquent in all associated qualification events, the qualification is lost and qualification status automatically reverts to "Not Qualified." Individuals do not lose a qualification as a function of refly factor for individual events. Loss of proficiency (delinquent refly factor) for all associated qualification events (events with measurable refly factor; '*' refly factor events excluded) constitutes loss of that qualification.

(2) Re-qualification. Re-qualification requires demonstration of proficiency in a specific skill. To regain a lost qualification, the individual must successfully re-complete all qualification events that are R-coded. Upon completion of all R-coded qualification events, the qualification status automatically reverts back to "Qualified." Qualifications regained in this manner require no additional documentation.

(3) Functional Check Pilot Qualifications. Aviation communities shall implement standardized Functional Check Pilot (FCP) syllabi in individual T&R manuals for all flying units. Standardized FCP workup/evaluation events shall be delineated in individual T&R manuals under the Requirements, Qualifications, Designations phase (600 level). The syllabi shall be structured in accordance with directives and guidelines established in the current version of COMNAVAIRFORINST 4790 aviation maintenance manual. At a minimum, the FCP certification event shall be evaluated and will not have CRP value attached. FCP qualification requires successful completion of a community standardized syllabus and a qualification letter from the CO.

c. Designations. Designations are assigned to individuals based on leadership ability. Other publications may be referenced to delineate additional designation training criteria. When an individual completes all designation training requirements, the individual may be granted the respective designation by the commanding officer.

(1) Loss of a Designation. Designations are command specific and remain in effect until removed for cause or the individual is transferred to another command.

(2) Re-designation. Community T&Rs may stipulate re-designation criteria; if re-designation criteria are not delineated, re-designation is at the discretion of the commanding officer.

(3) Tactical Flight Leader Designations. Flight communities are required to implement community standardized workup and evaluation events in for the following designations: Section Leader; Division Leader; Flight Leader; Mission Commander; and Air Mission Commander. Flight leadership re-designation criteria for aircrew that do not require Core Skill Introduction Refresher training is at the discretion of the commanding officer. For aircrew who require Core Skill Introduction Refresher training per paragraph 405, the minimum re-designation requirement for flight leader positions below is successful completion of the

associated T&R flight leadership evaluation event. Minimum flight leadership re-designation requirement waivers shall be approved by MAG/MEU commanding officers.

(4) Instructor Designations. Instructor designations are assigned to personnel based on ability to conduct academic ground and/or airborne instruction of a core skill or training requirement. Instructor designations are designed to enhance standardization and safety while training personnel in specific skills. T&R instructor designation/re-designation requirements should be consistent with, and may reference instructor requirements listed in the MAWTS-1 Course Catalog, NATOPS, and other applicable directives.

(5) Contract Simulator Instructors. Based on the increased use of simulation and civilian contract instructors (CIs), there is a need for T/M/S aircraft T&Rs to establish a syllabus for CIs. Each T/M/S community relies, to some extent, upon CIs to provide T&R instruction for simulation events. Therefore, each community that utilizes CIs for simulation training shall build and maintain a standardized CI syllabus for inclusion in individual T&R manuals.

203. TRAINING AND PERFORMANCE RECORDS MANAGEMENT

1. Individual Performance Records (IPR)

a. Units shall maintain Individual Performance Records for all assigned individuals undergoing aviation T&R syllabi training. Flight units shall utilize Aircrew Performance Record (APR) folders. MACCS units shall utilize MACCS Performance Record (MPR) folders. METOC/AES/AOS should use MPR folders, but may use similar four-part folders.

b. Syllabus Evaluation Forms. Syllabus evaluation forms shall be used for documenting personnel performance per paragraph 202.5.

c. IPRs shall consist of a four-part folder with the following sections as outlined below and per applicable NATOPS directives:

(1) Section One, Administrative Information. This section shall contain a Privacy Act statement, record of audit, and additional administrative information as appropriate.

(a) APRs shall contain appropriate undergraduate Aviation Training information in this section.

(b) MPRs shall contain a listing of all schools/courses attended by the individual during their career (i.e., MCCES, NTTC, Command and Control Systems Course, Weapons And Tactics Instructor Course, etc.) in this section.

(2) Section Two, Core Skill Introduction Training

(a) Core Skill Introduction syllabus evaluation forms shall be retained in this section for 2 years.

(b) After 2 years, a summary grade sheet showing the individual's event grades for the Core Skill Introduction syllabus shall replace the syllabus evaluation forms. The summary grade sheet shall be retained on a permanent basis. It shall include a record of deferred events and comments on strengths and weaknesses of the individual observed in Core Skill Introduction training.

(c) For joint training units, the commanding officer of the respective Marine Aviation Training Support Group (MATSG) or Marine Corps Administrative

Detachment (MCAD) will ensure the IPR contains complete section 2 information prior to personnel transfer.

(d) When applicable, the unit training officer shall reconcile those Core Skill Introduction events completed at non-Marine units with the applicable T&R syllabus. CG TECOM ATB directs commanding officers of the respective MATSG/MCAD to ensure the senior Marine instructor within the joint training unit completes the syllabus reconciliation form prior to transfer of the individual.

(3) Section Three, Squadron Training

(a) All syllabus evaluation forms for training conducted at the operational squadron shall be retained in this section. These "E" coded evaluations shall be retained in this section to note performance trends.

(b) This section shall contain a record of all academic/ground training courses completed as required.

(c) All command qualification and designation letters shall be maintained in this section.

(4) Section Four, Individual Training Requirements/Miscellaneous. This section may be used to retain any additional pertinent training records; PFT, NBC, individual weapons qualification, and shipboard fire fighting, etc. This section is optional if records are retained elsewhere.

d. IPRs shall be audited and updated when:

- (1) An individual initially reports to a unit.
- (2) Annually within 30 days of birthday.
- (3) Upon change in flying status (DIFOP, DIFDEN).

e. When individuals transfer, the transferring unit shall accomplish the following:

- (1) Screen all IPR sections for content and accuracy.
- (2) Include the most current T&R syllabus evaluation forms in section 3 of the IPR.
- (3) Include a current hardcopy report of the individual's event proficiency status information (normally generated by the automated training management system) in section 3 of the IPR.
- (4) The commanding officer (or authorized agent) shall sign the audit page certifying that the performance record is complete and accurate.

2. Naval Flight Record Subsystem (NAVFLIR) Records

a. NVG Flight Time. Aircrew shall record NVG flight information via Naval Flight Record Subsystem (NAVFLIRS) and Naval Aviation Logistics Command Management Information System (NALCOMIS) per OPNAVINST 3710.7. Operations personnel shall log pilot NVG time in the "special crew" time column of the Aviator Log Book. NVG time logged in the "special crew" time column shall be separated as total NVG time and NVG LLL time. For example, if a flight consisted of 3.0 total NVG hours and 1.5 hours of that time was LLL, the entry would be "3.0/1.5." NFO NVG time shall be similarly recorded in the First Pilot time column. Helicopter CC and Aerial

Observer NVG time shall be logged in the Instrument time column using the "ACT" column for total NVG time and the "SIM" column for NVG LLL time. NVG total flight time shall be carried over each fiscal year, as is total pilot time.

3. Aviation Automated Training Management Systems. The use of automated training management systems greatly enhances the accuracy and visibility of training management information, thereby improving the efficiency and effectiveness of training and operational risk management activities at the unit level.

a. Authorization. Marine Aviation is in the process of transitioning from the Squadron Assistance/Risk Assessment (SARA) program and the Automated Training and Readiness Information Management System (ATRIMS) to the Marine Sierra-Hotel Aviation Readiness Program (M-SHARP) as the authorized aviation training management system to be used to track all training governed by aviation T&R manuals. Applicable units are required to meet the M-SHARP training requirements in paragraph 3.b (per the fielding schedule or as soon as possible thereafter) and subsequently use M-SHARP per the guidelines in paragraph 3.c. Units using M-SHARP should discontinue use of all legacy aviation-specific training management systems (e.g. SARA, ATRIMS) including manual methods used to track training management information such as qualifications and proficiency (e.g. Microsoft Excel, Access, greaseboard, etc.). Units are still required to maintain aircrew logbooks per appropriate guidelines.

(1) Applicability. M-SHARP shall be used to track all aviation-related training governed by aviation T&R manuals for the following active-duty and reserve units: all fixed-wing, rotary-wing, and tilt-rotor flying squadrons and detachments; all FRS squadrons except VMAQ and VMFA; all MACG squadrons and detachments; all air station, H&HS, and VMR units for operational support aircraft and ATC training activities; all wing, MAG, MACG, and MCI headquarters units; and MAWTS-1.

(2) The following units may use M-SHARP as desired: all MWSG squadrons, detachments, and headquarters units; other supporting units such as HMX-1.

b. Training. M-SHARP training is offered regularly by M-SHARP field representatives. Applicable units are required to maintain a minimum of one operations representative (officer or enlisted) that has successfully completed the M-SHARP Administrators Course.

c. Deployments. Although web-based, M-SHARP supports installation on a single laptop for use in environments without internet connectivity.

(1) Pre-deployment. Administrative rights to NMCI computers must be granted before M-SHARP can be loaded on an NMCI computer. Prior to deployment, units must submit deployment information to NMCI via their CTR along with the computers they intend to deploy with, and NMCI will then grant administrative privileges to the deploying unit for their computers. M-SHARP can then be installed locally from CD-ROM along with the unit's data downloaded from the master M-SHARP server.

(2) During deployment. Portable installations of M-SHARP can be synchronized regularly with the master server through the use of a Synchronization of Portable Installation (SPIN) file. The SPIN file may be created regularly from the portable installation and contains a deployed unit's new information not yet reflected in the master server. The SPIN file must be transferred to an internet/NIPRNET-capable computer using a USB drive or other portable media where it can be submitted via email as an attachment. SPIN files of disconnected units shall be submitted once monthly not later than the 5th working day of the month in order to update the master M-SHARP database, although local policy may specify a

more frequent submission interval. While disconnected, units are responsible for maintaining their own backups locally and should conduct a full data backup at least once weekly.

(3) Post-deployment. Any remaining unsynchronized data from the deployment will be submitted via SPIN file. NMCI computers must be returned to their original state prior to reconnecting to the NMCI network, meaning M-SHARP and any other added applications must be uninstalled.

d. Best practices. The following procedures are recommended to minimize the level of effort required to maintain an accurate and effective training management system.

(1) Training/Technical Support. Units that rely upon the technical support options available to get questions answered, troubleshoot problems, and conduct refresher training as needed generally experience a significantly more effective system with the least amount of effort.

(2) Reports Usage. When M-SHARP-produced reports are used as the authoritative source of training information (as opposed to reports generated from data Excel, Access, or other systems), discrepancies are corrected promptly and data accuracy remains high.

(3) Use by non-Operations personnel. M-SHARP offers several security roles that allow various departments to maintain data directly without having to go through Operations, and doing so results in an overall improvement in M-SHARP effectiveness. The ideal scenario is when M-SHARP usage is institutionalized by all who maintain training-related information. For example, in flying squadrons all aircrew should enter flights (NAVFLIRs) in M-SHARP, the safety department should maintain qualifications and designations in M-SHARP, the senior watch officer should maintain all monthly duties in M-SHARP, and the squadron flight surgeon and corpsmen should maintain med up/down status in M-SHARP.

(4) Regular Audits. It is understood that training jackets, log books, and some other systems such as NALCOMIS contain information that also resides in M-SHARP. Conducting a regular audit of this information will help greatly in ensuring data accuracy is maintained over time. For flying squadrons, it is highly recommended that maintenance admin representatives conduct a daily or weekly audit of flight hour totals and operations representatives conduct a monthly audit of aircrew logbooks using M-SHARP's logbook report.

e. Points of Contact

TECOM Aviation Training Branch (ATB)

DSN: 278-4053
Commercial: (703) 784-4053
Web Page: <http://www.tecom.usmc.mil/atb>

M-SHARP

Web Page: <http://msharpsupport.com>. Contains names, phone numbers, and email addresses of all M-SHARP field representatives at each major air station.
Email: m-sharpsupport@innovasi.com

SARA Help Desk

Toll free: (877) 671-7272
Email: sara.support@boeing.com
Web Page: <https://accessto.boeing.com>

NAVMC 3500.14
3 Jul 07

CHAPTER 3

AVIATION TRAINING RULES OF CONDUCT (ROC)

	<u>PARAGRAPH</u>	<u>PAGE</u>
GENERAL AVIATION ROC	300	3-3
ROC FOR LOW ALTITUDE FLIGHT	301	3-3
FW LAT	302	3-5
RW TERF	303	3-7
TILTROTOR LAT	304	3-8
ROC FOR NIGHT OPERATIONS	305	3-9
RW NIGHT OPERATIONS	306	3-12
FW NIGHT OPERATIONS	307	3-14
TILTROTOR NIGHT OPERATIONS	308	3-15
ROC FOR AIR COMBAT MANEUVERING (ACM), DEFENSIVE MEASURES (DM), DEFENSIVE AIR COMBAT MANEUVERING (DACM), AND DEFENSIVE COMBAT MEASURES (DCM)	309	3-16
ROC FOR FORWARD AIR CONTROL (AIRBORNE) OPERATIONS FAC(A) .	310	3-18

FIGURE

3-1	FAC(A) CAS MISSION LOG	3-21
-----	----------------------------------	------

NAVMC 3500.14
3 Jul 07

CHAPTER 3

AVIATION TRAINING RULES OF CONDUCT (ROC)

300. GENERAL AVIATION ROC

1. General

a. Purpose. To standardize ROC for Fixed Wing (FW), Rotary Wing (RW), and Tiltrotor aircraft training events.

b. Scope. This chapter contains the overall policies, responsibilities, and training criteria for Low Altitude, Night Systems (NS), Air Combat Maneuvering (ACM), and Forward Air Control (Airborne) [FAC(A)] programs to include Low Altitude Tactics (LAT), Terrain Flight (TERF), FW ACM, DEFTAC, Defensive Combat Measures (DCM), Defensive Measures (DM), and Defensive Air Combat Maneuvering (DACM). Individual T&R manuals contain training syllabi and flight objectives for these programs. CG, MCCDC tasks the Commanding Officer, MAWTS-1 with developing training courses and establishing criteria for instructor certification for these programs.

c. Authority. Authority and responsibility for ROC rests with CMC (DC AVN), CG MCCDC and Force Commanders. Training ROC are applicable during peacetime training evolutions and are not intended to restrict contingency/combat operations.

d. Safety. Commanders shall conduct training in accordance with the guidelines of this chapter and OPNAVINST 3710.7.

2. Currency. Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of proficiency. For example, currency determines minimum altitudes in ROC based upon the most recent low altitude fly date.

3. CH-53 Passenger Restrictions. When CH-53D/E aircraft are used to transport passengers, the maximum allowable load is 24. Authority to deviate from this 24-passenger restriction for operational necessity is vested in the MAGTF commander.

301. ROC FOR LOW ALTITUDE FLIGHT

1. General

a. Purpose. To standardize ROC for low altitude flight programs.

b. Scope. T&R manuals contain the overall policies, responsibilities, training syllabi and flight objectives for FW, RW, and tiltrotor aircraft participating in LAT and TERF. This section stipulates the training criteria and the ROC peculiar to the two types of low altitude flight.

c. Safety. The low altitude regime places the highest demands on aircrew skill and judgment, and as such requires stringent ROC to ensure safe event completion. Squadron commanders shall ensure that aircrew conducting LAT/TERF training are qualified. Unscheduled LAT/TERF is strictly prohibited.

d. Definitions

(1) Comfort Level (CL). CL is the lowest altitude at which aircrew can accommodate task loading and maintain safe terrain clearance. A perceptual concept, CL concedes individual differences and is never a hard altitude. It will

vary according to terrain, aircrew skill, currency, and degree of training in the low altitude environment.

(2) Climb to Cope. Aircrew will employ climb to cope when situational awareness or mission performance is degraded. The climb to cope may be executed as an adjustment for CL or as a response to a "Knock It Off" call. Training may resume once all aircrew are confident that continued safe operations are assured.

(3) Knock It Off (KIO). When a dangerous loss of situational awareness is recognized or a potentially hazardous circumstance develops, any crewmember shall call for a KIO without delay. The response to a KIO call will be an immediate wings level controlled climb to briefed altitude and discontinuation of training until the cause for the KIO has been adequately addressed and all aircrew concur on a course of action.

(4) Terminate. To cease the current maneuver, crewmembers shall use the term "terminate." The response to "terminate" shall be an immediate discontinuation of maneuvering and leveling off at present or briefed altitude.

(5) Minimum Safe Altitude (MSA). An altitude that provides 500 feet of clearance above the highest obstacle within 5 nm either side of courseline or planned course deviation for that leg of the route. MSA shall be briefed for all LAT training.

(6) Emergency Safe Altitude (ESA). An altitude that provides 1000 feet of clearance above the highest obstacle within 25 nm either side of courseline for the entire route. ESA shall be briefed for all LAT training.

e. Weather Minimums. Low altitude weather minimums are as follows:

<u>Flight</u>	<u>Ceiling/Visibility</u>
TERF	1,000 Ft AGL/3 NM
LAT	3,000 Ft AGL/5 NM
MV-22 LAT in Conv Mode	1,000 Ft AGL/3 NM

f. Low Altitude Flight Qualification, Proficiency, and Currency

(1) Low Altitude Qualifications. Aircrew achieve LAT/TERF qualification by completing the stage of training or specified events as delineated in individual T&R syllabi and Chapter 6 of this Manual. Non-qualified aircrew require supervision of a TERF/LAT instructor.

(2) Low Altitude Proficiency

a. When LAT/TERF qualified aircrew lose proficiency in a particular LAT/TERF flight event, they may regain proficiency in that flight event by satisfactorily demonstrating those skills required of that particular syllabus flight event to a Low Altitude Tactics Instructor (LATI) or Terrain Flight Instructor (TERFI).

b. In cases where there are no proficient LATIs/TERFIs available, two non-proficient LATIs/TERFIs may fly together in order to regain proficiency (See paragraph 202.3.d).

(3) Low Altitude Flight Currency. Currency intervals relate to flight exposure involving a specific skill and are divided into time intervals. When aircrew exceed a currency interval, the aircrew must abide by the minimum altitudes

commensurate with their particular currency interval. Aircrew may update the currency interval and corresponding minimum altitudes on one sortie; the individual may update currency after flying an appropriate segment of a LAT/TERF route. In aircraft requiring two or more aircrew for the briefed mission, the most restrictive aircrew's currency interval applies to the aircraft. In flights of two or more aircraft, the most restrictive aircrew currency interval applies to the flight.

g. Low Altitude Flight Training Areas

(1) Pilots shall conduct low altitude flight in restricted airspace, MOAs, and on published Military Training Routes. Wing/MAGTF commanders may designate other low altitude training areas.

(2) Low altitude training areas should be suitable for the aircraft to perform training in dive recovery, three dimensional maneuvers and three dimensional defensive maneuvers against simulated air-to-air, SAM, and AAA threats. Although not required, the optimum terrain should also allow training in terrain masking, indirect terrain masking, and ridgeline crossings.

(3) The area should be free of vertical obstacles that constitute a danger to the free navigation required of low altitude training.

h. Night Low Altitude Flight. Night low altitude flight (LAT/TERF) without NVGs is prohibited. Aircrew must be day LAT/TERF qualified and current prior to commencing night low altitude training.

i. LAT/TERF Training With Embarked Troops. Low altitude flight poses increased operational risk. The transport of troops during TERF and LAT training is authorized subject to the following restrictions:

(1) All aircrew are qualified, proficient and current per this order and the respective T/M/S T&R Manual.

(2) Aircrew shall utilize TERF/LAT areas or routes as specified in respective MAW and MAG operations SOPs.

(3) The aircraft have the requisite power margin as specified in respective MAW, MAG and squadron operations SOPs.

(4) Authorization for the specific TERF/LAT training event has been approved by the MAGTF commander. For training events conducted during MAWTS-1 WTI classes, approval authority is CG TECOM.

(5) Waiver authority for any of the above restrictions is vested in the MEF CG.

302. FW LAT

1. The term LAT applies only to operational FW aircraft, where the briefed intent is to conduct tactical flight where terrain avoidance is a significant factor. LAT is further defined as intent to fly below 500 feet AGL.

2. Due to fixed wing adversary missions in rotary wing T&R manuals the F-5 T&R manual requires a LAT qualification and LATI syllabus. The minimum altitude for the F-5 in a LAT environment shall be 500 feet AGL.

3. Aerial delivery and Assault Landing Zone operations, from the IP to the DZ/ALZ, conducted by KC-130 aircraft are excluded from the LAT definition. IP to DZ/ALZ

constitutes the terminal environment; minimum altitudes listed in the KC-130 ANTPP apply.

4. FW Ordnance Delivery Minimum Recovery Altitudes. FW ordnance delivery for the sole purpose of refining delivery skills is excluded from the LAT definition. The minimum dive delivery recovery altitude will be the applicable TACMAN NATIP altitude as defined for the specific ordnance being employed. The minimum altitude will be the result of an appropriate release altitude that accounts for the highest altitude as required for fragmentation avoidance, terrain clearance and fuse arming time.

5. For initial qualification, a LATI is required in the aircraft/flight.

6. FW NS LAT. See paragraph 307.1.

7. FW LAT Currency and Minimum Altitudes. The minimum altitude for FW aircraft LAT training is 300 feet AGL. Day LAT shall not update NS LAT currency requirements. NS LAT shall update day LAT currency requirements. The following minimum altitude restrictions based on currency interval apply:

- a. Single Aircraft and Section. CL but no lower than 300 feet.
- b. Division/Strike Formation. CL but no lower than 500 feet AGL.
- c. In a formation where sections have a minimum of 1 nm nose to tail separation, the flight lead should consider each section as a separate section for altitude criteria.

CL, BUT NO LOWER THAN:

LAT Event	1-30 Days Currency Interval	Over 30 Days Currency Interval
Single or Section	300' AGL	500' AGL
Division	500' AGL	500' AGL
Aerial Refueling	500' AGL	1,500' AGL

8. FW LAT Minimum Altitude Waivers. Requests to fly LAT training events lower than the FW LAT minimum altitudes delineated above shall be submitted in message format to HQMC via operational chain of command (To CMC WASHINGTON DC APP; Info CG TECOM ATB). Requested training events, altitudes and applicable time periods for the waiver should be identified.

9. **When authorized by HQMC, the following FW LAT minimum altitude restrictions based on currency interval apply:**

- a. Single Aircraft

(1) CL but no lower than 200 feet AGL.

(2) Minimum Altitude Capability (MAC). MAC but no lower than 100 feet AGL (200 ft AGL for KC-130 aircraft) when pilot is current and chased by a current LATI

on an approved low altitude course. Night MAC Training is restricted to no lower than 200 feet AGL.

(3) MAC is flown as a defensive response to engagement by a threat and during speed rush baseline training. At this level, aircrew focuses entirely on terrain clearance tasks. The minimum FW MAC training event altitude is 100 feet AGL (200 feet AGL for KC-130 aircraft).

b. Section

(1) CL but no lower than 200 feet AGL.

(2) MAC not authorized.

c. Division/Strike Formation

(1) CL but no lower than 500 feet AGL.

(2) MAC not authorized.

(3) In a formation where sections have a minimum of 1 nm nose to tail separation, the flight lead should consider each section as a separate section for altitude criteria.

When authorized by HQMC: CL, BUT NO LOWER THAN:

LAT Event	1-15 Days Currency Interval	16-30 Days Currency Interval	30+ Days Currency Interval
Single Aircraft	200' AGL/MAC	300' AGL	500' AGL
Section	200' AGL	300' AGL	500' AGL
Division	500' AGL	500' AGL	500' AGL
Aerial Refueling	500' AGL	500' AGL	1,500' AGL

303. RW TERF

1. TERF Flight. TERF is RW flight conducted during day or night, VMC, when the intent is to fly below 200 ft AGL. This Manual excludes missions performed on an ordnance delivery range for the sole purpose of refining delivery skills from the TERF definition. Low Level, Contour, and Nap Of the Earth (NOE) compose the basic TERF regimes. Confined Area Landings (CALs) training does not constitute TERF from the IP to the LZ.

a. Low Level Flight. Flight conducted at a selected altitude to minimize or avoid enemy detection or observation. Aircrews pre-select the route that generally consists of straight-line navigation, constant airspeed and constant altitude (MSL).

b. Contour Flight. Contour Flight conforms generally to the elevations of the earth. Contour flight takes advantage of available cover

and concealment to avoid enemy observation or detection of the aircraft. The pilot varies airspeed and altitude as vegetation and obstacles dictate.

c. Nap of the Earth (NOE) Flight. NOE is flight conducted as close to the earth's surface as vegetation and obstacles permit while generally following the contours of the earth's surface. The pilot varies airspeed and altitude as influenced by terrain, weather, ambient light, and the enemy situation.

2. Aircrew Requirements. To ensure full lookout coverage capability in helicopters possessing a cabin section (CH-46, CH-53, UH-1N), an aerial gunner/observer shall be assigned as part of the aircrew for all TERF missions. The aircraft commander shall ensure a thorough mission brief is conducted with all aircrew. Emphasis should be placed on lookout doctrine, obstacle clearance, ICS radio procedures, and emergencies.

3. TERF Currency and Minimum Altitudes

- a. Minimum TERF altitude for CH-46/53 is 50 feet AGL.
- b. Minimum TERF altitude for AH/UH-1 is 10 feet AGL.
- c. The following currency/minimum altitude/airspeed restrictions based on currency apply:

COMFORT LEVEL, BUT NO LOWER THAN:

TERF Event	1-30 Days Currency Interval	Over 30 Days Currency Interval
Low Level	100' AGL	150' AGL
Contour	50' AGL	100' AGL
NOE	10' AGL (40 knots or less)	Authorized after Para 303.3.f requirements are met.

d. Refer to Para 301.1.f.3 for low altitude flight currency involving two or more aircrew.

e. After 30 days, CH-46/53 pilots shall regain currency by performing low level flight prior to conducting contour flight.

f. After 30 days, AH/UH-1 pilots shall regain currency by flying an NOE flight with a 30-day current PQM. If a 30-day current PQM is unavailable, the pilots shall regain currency by performing low level flight followed by contour flight prior to NOE flight.

304. TILTROTOR LAT

1. Tiltrotor LAT is flight conducted during day or night, VMC, where the briefed intent is to conduct tactical flight where terrain avoidance is a significant factor. LAT is further defined as intent to fly below 500' AGL in order to develop terrain avoidance skills. Assault Landing Zone operations are excluded from the LAT definition. Tiltrotor LAT is composed of both low level and contour flight profiles, and can be accomplished in APLN and CONV (Nacelle settings greater than or equal to 60 degrees) modes.

a. Low Level Flight. Flight conducted at a selected altitude to minimize or avoid enemy detection or observation. Aircrews pre-select a route that generally consists of straight-line navigation, constant airspeed and constant altitude (MSL).

b. Contour Flight. Contour flight conforms generally to the elevations of the earth. Contour flight takes advantage of available cover and concealment to avoid enemy detection or observation of the aircraft. The pilot varies airspeed and altitude as vegetation and obstacles dictate.

2. Tiltrotor LAT Currency and Minimum Altitudes. Following successful completion of a 50 nautical mile segment on an approved LAT route at the appropriate currency interval altitude, the aircrew is considered current and may continue LAT at the next lower currency interval. The following minimum altitude restrictions based on currency interval apply:

LAT Currency and Minimum* Altitudes (AGL) CL, But No Lower Than:				
Flight Mode	0-30 Days		31+ Days	
	Day/ HLL	LLL	Day/ HLL	LLL
APLN	200'	500'*	500'	500'
CONV	50'	100'	200'	200'

*In LLL conditions, 300' AGL in airplane (APLN) mode is authorized for a 0-30 day LAT current crew along an approved route segment of 50 nm or less. Descent to 300 AGL under these circumstances shall be commenced from a wings level attitude. Once established at the lower altitude, the aircraft is limited to 30° angle of bank with no single turn exceeding 60° of heading change. Prior to flying a route segment at 300' AGL in LLL conditions, the segment shall be screened to ensure that there are no obstructions in excess of 200'AGL for three nautical miles either side of the route width.

305. ROC FOR NIGHT OPERATIONS

1. General

a. Purpose. To standardize the training rules for FW, RW and tiltrotor aircraft conducting night operations training.

b. Scope. This section stipulates training criteria and ROC peculiar to FW, RW and tilt-rotor aircraft night operations.

c. Safety. Squadrons will conduct night operations within the guidelines of this Chapter and OPNAVINST 3710.7. Commanders shall ensure aircrew conducting night training are properly qualified and appropriate flight leadership is represented within the flight.

d. Illumination. The approved method for deriving illumination requirements for night operations is the Solar/Lunar Almanac Program (SLAP). This program does not factor in the effects of cloud cover, humidity, haze, dust, effects of low moon angle, terrain, and shadows. These effects may degrade forecast illumination. Sound judgment must temper decisions to fly under less than optimal conditions. Illumination levels are defined as:

(1) High Light Level (HLL): Illumination .0022 LUX or above.

(2) Low Light Level (LLL): Illumination below .0022 LUX.

e. NVD Operations. Aircrew shall only utilize NAVAIR approved NVGs for specific T/M/S. NAVAIR NVD restrictions as applicable to T/M/S and NVG model/type shall be adhered to. Squadrons shall establish an NVG eye lane as described in the MAWTS-1 NVG Manual or use the ANV-2020 (Hoffman 20/20 box) to assess NVG performance prior to every NVG flight.

f. Night Systems (NS) Qualifications and Currency

(1) NS Qualifications. Aircrew achieve NS qualifications by completing the stage of training or specified events as delineated in individual T&R syllabi and Chapter 6 of this Manual. Non-qualified aircrew require supervision of a Night

Systems Instructor (NSI), Night Systems SAR Instructors (NSSI), or Night Systems Familiarization Instructor (NSFI).

(2) Night Currency. No pilot shall sign for an aircraft for a night flight without having flown that model aircraft within the previous 15 days.

2. Night External Lighting Rules

a. FW Night External Lighting. Aircraft external lighting shall comply with existing FAA rules except as modified in FAA Exemption No. 8028. Aircraft incandescent external lighting shall be at the highest intensity consistent with NVG compatibility unless the FAA grants specific FAA waivers to solely use IR external lighting.

(1) Single aircraft operations. Navigation lights on and anti-collision lights on.

(2) Multi-aircraft operations

(a) Flights of up to four aircraft shall use lighting compatible with NVD operations. The last aircraft in the flight shall fly with navigation lights on, formation lights as desired, and anti-collision lights on. Anti-collision light shall be incandescent when outside of restricted airspace.

(b) All flight members shall be briefed on the lighting configuration of each aircraft in the flight before they conduct separation and rejoin.

(3) Within approved special use airspace or military training routes, the aircrew may secure the anti-collision lights if they pose a hazard.

(4) The FAA regulation to see and avoid shall take priority over NVG tactics training.

b. Helicopter and Tiltrotor External Lighting. Aircraft external lighting shall comply with existing FAA rules except as modified in FAA Exemption No. 8028. The airspace covered by the exemption is defined as that airspace within reasonable proximity to Marine Corps Air Stations and other such civilian and military air facilities at which NVD operations are normally conducted and are also pursuant to paragraphs 3-7 of the original FAA Exemption No. 5978A and shall include the following:

(1) Single aircraft operations

(a) Navigation/position lights on and at the highest intensity consistent with NVD compatibility and anti-collision lights on.

(b) When conducting ground hover or during terminal phase of landing at designated training areas, anti-collision lights and/or navigation/position lights may be turned off if they interfere with safe flight operations.

(c) When operating in Class D airspace, controller permission is required prior to securing lights during hover or terminal phase of landing.

(2) Multi-aircraft operations

(a) Outside Restricted Areas. Flights of up to four aircraft are permitted and shall have:

1 Navigation/position lights on the highest intensity compatible with NVD operations and ambient conditions for lead through the dash three aircraft.

2 The last aircraft in the flight shall have anti-collision and navigation/position lights on and at an appropriate setting for existing ambient conditions and will be visible to non-participating aircraft.

3 All functional, visible formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

4 Use of IR lighting is at the discretion of the aircraft commander/flight leader. This does not preclude the requirement for visible navigation and anti-collision lights as described above.

(b) Outside Restricted Areas but in airspace covered by the FAA Exemption. Flights of up to four aircraft are permitted and shall have:

1 Navigation/position and anti-collision lights may be secured for lead through the dash three aircraft.

2 All functional, visible formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

3 The last aircraft in the flight shall have anti-collision and navigation/position lights on and at an appropriate setting for existing ambient conditions and visible to non-participating aircraft.

4 Use of IR lighting is at the discretion of the aircraft commander/flight leader. This does not preclude the requirement for visible navigation and anti-collision lights as described above.

5 All aircrew shall be familiar with the requirements of FAA exemption 8028, available for download at <http://www.tecom.usmc.mil/atb/> .

(c) Within Restricted Areas. When operating in restricted areas with NVDs, flights shall operate as follows:

1 Lead to but not including the last aircraft may have navigation/position and anti-collision lights secured.

2 All functional, formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

3 The last aircraft in each flight shall have anti-collision lights on and navigation/position lights on and at the highest intensity compatible with NVD operations.

4 Regardless of the number of aircraft in the flight, separation between lead aircraft and the last aircraft in the flight shall not exceed 1 nm.

5 These requirements should not prevent securing of external lights due to adverse lighting effects on NVDs during LAT, TERF, landing, or hovering flight.

6 When NVD-only operations are conducted in restricted airspace (no unaided participating aircraft) IR anti-collision lights may replace visible anti-collision lights at the discretion of the aircraft commander/flight leader. This only applies when the flight lead/aircraft commander is assured that the flight has exclusive use of the airspace.

(d) Flights outside CONUS shall obtain approval from the airspace controlling authority prior to conducting training with aircraft lighting secured.

(3) FAA regulations to see and avoid shall take priority over NVD tactical training. Modification, taping or "cat-eyeing" of external lighting is not authorized.

306. RW NIGHT OPERATIONS

1. Night Training Policies

a. On unaided night flights, NSQ aircrew may wear and temporarily utilize NVGs to enhance situational awareness, terrain avoidance, and safety. The flight will be conducted under unaided flight rules. NVG use shall be noted on the flight schedule.

b. To ensure full lookout coverage in helicopters possessing a cabin section, there shall be an aerial gunner/observer in addition to the crew chief for NVG flights, except as detailed per individual T&R manuals.

c. All pilots flying NVG HLL flights shall fly with a designated NSI/NSFI unless both the pilot and copilot are NSQ HLL. All enlisted aircrew flying NVG HLL flights shall fly with a designated NSI/NSSI/NSFI unless both the crew chief and the AGO are NSQ HLL. All pilots shall fly NVG LLL flights with a designated NSI unless both the pilot and copilot are NSQ LLL. All enlisted aircrew flying NVG LLL shall fly with a designated NSI/NSSI unless both the crew chief and the AGO are NSQ LLL.

d. Night TERF operations without NVGs are prohibited. NVG TERF flights shall be conducted in approved areas or on routes using maps updated with current hazards. Night TERF operations must meet the requirements set forth in paragraph 305 of this Order.

e. Night Carrier Qualifications. All T/M/S aircraft T&R manuals shall require the capability to operate unaided on ships. In recognition of the safety and increased situational awareness afforded by the use of NVDs, unaided CQ is not a prerequisite to NVG CQ. Since landing to an NVD compatible deck cannot always be assured, unaided recoveries remain a valid requirement (Core Plus).

2. Night Currency. Prior to conducting night shipboard operations with passengers aboard, the pilot and copilot shall be night carrier qualified and have conducted a minimum of two night shipboard landings each within the last 30 days. All other crewmembers shall be night carrier qualified and have one night shipboard flight within the last 30 days.

3. NVG Equipment Requirements

a. Aircrew shall conduct NVG operations only in NVG compatible aircraft. Squadrons shall not procure or manufacture NVG light kits.

b. Aircrew members shall possess an operational standard issue flashlight with an NVG compatible lens on every NVG flight.

c. Aircraft shall have an operational spotlight on all NVG sorties. The IR spotlight is not a substitute for ambient illumination.

4. NBC Training. For NBC flight training, aircrew are authorized to wear full NBC protective equipment subject to the following restrictions:

a. For night operations, only the CBR/AR-5 eye/respiratory protective system is authorized for in-flight use.

b. Initial NBC training syllabi shall be complete per T&R T/M/S syllabi.

c. All aircrew shall be NSQ appropriate for the ambient conditions. When using the CBR/AR-5 during NVG training flights, one pilot and one aircrew must remain unmasked due to the restricted field of view when using AN/AVS-9 with the CBR/AR-5.

5. NVG Training Without Troops. NVD training/operations are subject to the following restrictions:

a. Minimum aircrew for all RW during HLL shall include HLL qualified HAC/PQM, and HLL qualified co-pilot, crew chief and aerial observer.

b. Minimum aircrew for all RW during LLL shall include LLL qualified HAC/AHC/UHC, and LLL qualified co-pilot, crew chief and aerial observer.

c. All aircrew shall be NSQ HLL per appropriate T&R syllabus prior to commencing LLL syllabus training.

6. NVG Training With Troops

a. Flights with embarked troops in HLL conditions are subject to the following criteria:

(1) Minimum aircrew as defined in paragraph 306.1.b.

(2) The pilot and copilot shall be NSQ HLL per the appropriate T&R syllabus and must have flown one hour of NVG time within the last 30 days.

(3) Crew chiefs and aerial gunners/observers shall be NSQ HLL per the appropriate T&R syllabus and have flown one hour of NVG time within the last 30 days.

b. NVG operations with embarked troops in the LLL range are subject to the following criteria:

(1) Minimum aircrew as defined in paragraph 306.1.b.

(2) The pilot and copilot shall be NSQ (HLL and LLL) per the appropriate T&R syllabus and have flown one hour of NVG time (HLL or LLL) within the last 30 days.

(3) Crew chiefs and aerial gunners/observers shall be NSQ LLL per the appropriate T&R syllabus and have flown one hour of NVG time (HLL or LLL) within the last 30 days.

7. NVG Carrier Qualification (NVGCQ)

a. NVGCQ shall be delineated in respective T/M/S syllabi.

b. All participants shall have a thorough understanding of LHA/LHD NATOPS and fleet/ship specific NVG procedures as well as other applicable directives and procedures. Aircrew shall brief, understand, and comply with these directives and procedures.

c. The Pilot Under Instruction (PUI) and/or Crew Chief/AGO under instruction shall be NSQ HLL.

d. Unaided night CQs will be chained to aided CQs.

307. FW NIGHT OPERATIONS

1. FW NS LAT Training

a. The following equipment is required and shall be operable for FW NS LAT training missions unless the MAGTF/MAG commander grants a waiver: Night Vision Devices, NVG compatible cockpit lighting, Heads Up Display (HUD), inertial navigation systems, moving map, radar altimeter, and anti-collision lights.

b. FW NS LAT altitude restrictions, currency and proficiency requirements are the same as day LAT restrictions and requirements.

c. FW NS LAT operations shall only be conducted during HLL conditions.

d. FA-18/AV-8/KC-130J aircrew conducting FW NS LAT operations shall be LAT and NS Low qualified. Non-NSQ Low aircrew shall be NSQ HI prior to NSQ Low training and require supervision of an NSI flight lead during NSQ Low training (see Appendix C for NSQ HI/Low definitions).

2. Non-LAT FW NS Training

a. FW night flights are limited to 1,000 feet AGL minimum when operating without NVGs.

b. NAs/NFOs who are not NSQ/NSQ HI require an NSI in the flight. For EA-6 aircraft, NS qualification requirements apply to front seat aircrew.

c. Pilots who are NSQ, NSQ HI, or NSQ Low may operate down to minimum altitudes of 500' AGL in HLL conditions and 1000' AGL in LLL conditions.

d. KC-130 altitude restrictions above apply except for aerial delivery and ALZ missions from IP inbound. IP to DZ/ALZ constitutes the terminal environment; minimum altitudes listed in the KC-130 ANTP apply.

3. During unaided flights, NSQ aircrew not at the controls may wear and temporarily utilize helmet mounted NVGs to enhance situational awareness, terrain avoidance and safety. NVG use by authorized aircrew shall be noted on the flight schedule. Aircrew not at the controls may use NVDs in the handheld mode to enhance situational awareness. Squadrons shall not procure or manufacture NVG light kits.

4. When conducting NVG operations, all aircrew shall use NVGs unless crew duties dictate otherwise. In a flight of aircraft, all aircrew in the flight shall use NVGs unless crew duties dictate otherwise. Flights utilizing NVGs may support, or be supported by, non-NVG equipped aircraft provided they are briefed and flown as a separate flight. Helmet mounted NVGs shall be utilized unless crew duties dictate otherwise. When crew duties dictate, NVGs may be temporarily donned in the up position.

5. The use of NVGs for FW takeoffs and landings is authorized provided airfield lighting has been adjusted to the minimum level consistent with flight safety. Consideration must be made for lighting conditions in the local environs as well. NAVAIR NVD restrictions applicable to T/M/S and NVG model/type shall be adhered to.

308. TILTROTOR NIGHT OPERATIONS

1. Night Training Policies

a. On unaided night flights, NSQ crewmembers may wear and temporarily utilize NVGs to enhance situational awareness, terrain avoidance, and safety. The flight will be conducted under unaided flight rules. NVD use by authorized crewmembers shall be noted on the flight schedule.

b. The requirement for an aerial gunner/observer in the cabin section in addition to the crew chief for NVD flights is as specified in MV-22 T&R Chapters.

c. Crewmembers shall fly NVD events with a designated and proficient NSI (or NSFI for 100 level training) unless the aircrew are NSQ for the predicted light level.

2. Night Currency and Proficiency

a. Prior to conducting night shipboard operations with passengers aboard, the pilot and copilot shall be night carrier qualified and will have conducted a minimum of two night aided shipboard landings each within the previous 30 days. All other aircrew shall be night carrier qualified.

b. When qualified aircrew lose proficiency in a Night Systems LAT sortie, they may regain proficiency by satisfactorily demonstrating those skills required of that particular syllabus flight to an NSI.

3. NVD Training Without Troops. For initial and refresher training, the copilot, crew chief and aerial gunner/observers shall be NSQ HLL per the appropriate MV-22 syllabus prior to flying in LLL conditions.

4. NVD Training With Troops

a. Flights with embarked troops in HLL are subject to the following criteria:

(1) Minimum crew IAW the applicable MV-22 syllabus.

(2) The pilot and copilot shall be designated NSQ HLL and must have flown at least one hour of NVD time within the last 30 days.

(3) Crew chiefs and aerial gunners/observers shall be NSQ HLL.

b. NVD operations with embarked troops in LLL conditions are subject to the following criteria:

(1) Minimum crew IAW the applicable MV-22 syllabus.

(2) The pilot and copilot shall be designated NSQ (HLL and LLL) and must have flown at least one hour of NVD time (HLL or LLL) within the previous 30 days.

(3) Crew chiefs and aerial gunners/observers shall be NSQ LLL.

5. NVD Carrier Qualification (NVDCQ)

a. NVDCQ shall be delineated in respective T/M/S syllabi.

b. All participants shall have a thorough understanding of LHA/LHD NATOPS and fleet/ship specific NVD procedures as well as other applicable directives and procedures. Crewmembers shall brief, understand, and comply with these directives and procedures.

c. The PUI shall be NSQ HLL.

d. Unaided night CQs will be chained to aided CQs.

309. ROC FOR ACM, DEFTAC, DM, DACM, and DCM

1. General

a. Purpose. To standardize ROC for aircraft conducting ACM/DEFTAC/DM/DACM/DCM training. The rules set forth herein and in OPNAVINST 3710.7 are minimum requirements. Commanders should promulgate supplementary directives to delineate syllabus contents, proficiency levels required, communications procedures, safety precautions, and other applicable areas of concern. Responsibility for the safe and efficient implementation of realistic combat training rests with all levels of command.

b. Scope. ACM/DEFTAC/DM/DACM/DCM training is designed to develop the high level of skill required to combat the current and future threat. OPNAVINST 3710.7 and the Aviation T&R Program contains the overall policies, responsibilities, training syllabi, and flight objectives for ACM/DEFTAC/DM/DACM/DCM.

c. Safety. Squadrons conducting ACM/DEFTAC/DM/DACM/DCM will operate within the guidelines of this chapter, OPNAVINST 3710.7, and applicable MAWTS-1 publications. Squadrons should conduct FW ACM/DEFTAC training under radar control when available. Commanders shall ensure aircrew conducting ACM/DEFTAC/DM/DACM/DCM training are properly qualified and appropriate flight leadership is represented within the flight. Unscheduled ACM/DEFTAC/DM/DACM/DCM is strictly prohibited.

d. ACM/DEFTAC/DM/DACM/DCM Qualifications. Aircrew achieve qualification by completing the stage of training or specified events as delineated in individual T&R syllabi and Chapter 6 of this Manual. Non-qualified aircrew require supervision of a ACTI/DM/DEFTAC/RWDACM/DCM instructor.

e. ACM/DEFTAC/DM/DACM/DCM Training Areas

(1) Training shall only be conducted in designated warning areas, restricted areas, Military Operating Areas (MOAs), appropriate blocks of controlled airspace as assigned by Air Traffic Control (ATC), or in other designated areas where safe separation from non-participants can be maintained.

(2) At a minimum, designated ACM/DEFTAC/DM/DACM/DCM training areas shall be clear of Federal airways, control zones, and other areas of air traffic congestion, unless established pursuant to a letter of agreement with the Federal Aviation Administration (FAA) or host nation agreement.

(3) When authorized by Force commanders, subordinate commanders may designate ACM/DEFTAC/DM/DACM/DCM training areas and establish procedures to ensure aircrew and flights entering these areas are aware of all other flights operating therein.

(4) ACM/DEFTAC/DM/DACM/DCM aircrew should use instrumented air combat ranges such as the Navy/Marine Tactical Aircrew Combat Training System (TACTS) or the Air Force Air Combat Maneuvering Instrumentation (ACMI) as much as possible.

(5) ACM/DEFTAC/DM/DACM/DCM training flights entering special use airspace will request, from the appropriate controlling agency, advisory information on all other flights operating in the same area. Flights will use RADAR flight following when practical.

2. FW Air Combat Maneuvering. Aircrew participating in ACM/DEFTAC will conform to the following flight guidelines:

a. FW v FW

(1) When all crewmembers of a flight are ACM/DEFTAC qualified, the flight does not require an Air Combat Tactics Instructor (ACTI), a Defensive Tactics Instructor (DEFTACI), or an Adversary Tactics Instructor (ATI).

(2) A non-ACM qualified NA may participate in ACM/DEFTAC training provided his flight leader is an ACTI/DEFTACI. In the case of 1 V 1 dissimilar ACM, the adversary must be an ACTI/ATI (USMC) or designated ACM instructor.

(3) A non-ACM/DEFTAC qualified NA/NFO of a crew concept aircraft may participate in ACM/DEFTAC training, provided at least one other aircrew in the same aircraft is designated an ACTI/DEFTACI.

(4) In the case of 1 V 1 dissimilar DEFTAC training with a non-qualified NA and/or NFO, the adversary pilot must be an ACTI/ATI or ACM Flight Lead/Section Lead.

b. FW v RW or Tiltrotor. Aircrew of FW aircraft engaged in RW or tilt-rotor attack shall be ACM and LAT qualified. Slow speed, high AOA maneuvering below 10,000 ft AGL is prohibited by FW aircraft. Direct over-flight of adversary aircraft by the FW aircraft is prohibited. Supersonic flight is not authorized. Minimum FW altitude is 500 ft AGL.

c. Per OPNAVINST 3710.7, the following maneuvers are not considered ACM training:

(1) Snapshot drills (Gun Weave, Weapons Weave).

(2) Tail Chase (Heat to Guns drills).

(3) Forward Quarter Missile Defenses terminated at the merge.

(4) Air Intercepts performed per applicable portions of the T&R Manual.

(5) Aerobatic maneuvers per NATOPS manuals on scheduled training flights approved by competent authority.

3. DM and DACM. RW assault aircrew conducting DM and RW attack and utility aircrew conducting DACM will conform to the following flight guidelines. These training rules, along with the applicable T/M/S T&R syllabi and the MAWTS-1 DM and DACT guides delineate the responsibilities and flight objectives for this training.

a. When all aircrew of a flight are DM/DACM qualified, the flight does not require a Defensive Measures Instructor (DMI)/Defensive Air Combat Maneuvering Instructor (DACMI). Additionally, two RWDACM qualified pilots may fly RWDACM sorties for training and proficiency.

- b. To ensure full lookout coverage capability in RW aircraft possessing a cabin section, there shall be an aerial gunner/observer in the cabin section in addition to the crew chief.
- c. A non-DM/DACM qualified pilot may participate in DM/DACM training provided the aircraft commander is a designated DMI/DACMI. A non-DM qualified aircrew serving in the cabin section may participate in DM training provided the other aircrew serving in the cabin section is a designated DMI.
- d. DM and DACM shall be conducted in day VMC in accordance with OPNAV 3710.7.
- e. Pilots of FW aircraft participating in DM/DACM shall be LAT and ACM qualified. Aircrew of RW aircraft conducting DM/DACM shall be TERF qualified and proficient.
- f. All DM/DACM participants must be aware of their particular aircraft's performance capabilities and limitations. Operational power checks or predictions (e.g. PFPS HOPS tool) should be conducted to assist in this awareness as required.
- g. Minimum RW altitude for DM and DACM against a FW or RW threat is 100 ft AGL. Minimum RW altitude for DM against a ground-based threat is 50 ft AGL. Minimum FW altitude for DM and DACM will be in accordance with OPNAVINST 3710.7.
- h. The friendly element will initiate maneuvering line numbers no closer than 200 ft between friendly aircraft. Upon first indication of the bandit the friendly element will maneuver to maintain at least 500 ft of separation from all aircraft during the engagement, including aircraft within the same element. Minimum aircraft separation during pre-briefed tail chase maneuvers in DACM is 200 ft.

4. DCM

- a. DCM consists of two types of events:

- (1) 2 Tiltrotor v 1 RW.
- (2) 2 Tiltrotor v 1 FW.

- b. DCM Aircrew Requirements

- (1) When all crewmembers of a flight are DCM qualified, the flight does not require a DCMI.
- (2) Minimum crew requirements shall be IAW the applicable T&R syllabus.
- (3) A non-DCM qualified pilot may participate in DCM training, provided the Tiltrotor Aircraft Commander is a designated DCMI. A non-DCM qualified aircrew serving in the cabin section may participate in DCM training, provided the other aircrew serving in the cabin section is a designated DCMI.

- c. Minimum tiltrotor altitude is 200 ft AGL.

310. ROC FOR FORWARD AIR CONTROL (AIRBORNE) OPERATIONS FAC(A)

1. General

- a. Purpose. To standardize the training rules for all USMC aircraft conducting FAC(A) training and ensure compliance with the most recent version of the Joint Close Air Support Action Plan Memorandum of Agreement, Joint Forward Air

Controller (Airborne) [As of this publication date, JCAS AP MOA 2004-02, JFAC(A), 24 March 2005; referred to as the 'JFAC(A) MOA' for brevity sake].

b. Scope. This section stipulates training criteria and ROC peculiar to FAC(A) operations.

c. Safety. Squadrons conducting FAC(A) operations shall operate within the guidelines of this chapter. Commanders shall ensure aircrew conducting FAC(A) training are properly qualified and appropriate flight leadership is represented within the flight.

d. FAC(A) Qualifications. Aircrew achieve the FAC(A) qualification by completing the specified requirements as delineated in individual T&R syllabi and the requirements delineated in the JFAC(A) MOA. Aircrew undergoing initial FAC(A) qualification training require supervision of a FAC(A) instructor [FAC(A)I].

2. When supervising unqualified individuals, the supervising FAC(A) or FAC(A)I shall be in the same section/flight element as the unqualified aircrew. The supervising FAC(A) or FAC(A)I shall maintain a position to observe the training operation, and if required, assume control of the training operation, immediately "ABORT" the control, and/or "CHECK FIRE" supporting arms as appropriate.

3. When a FAC(A) or FAC(A)I is operating in a supervisory role, both the unqualified individual and the supervising FAC(A)/FAC(A)I may log the same controls that the unqualified aircrew conducts and logs.

4. JCAS AP MOA JFAC(A). Units conducting FAC(A) training shall comply with JFAC(A) MOA requirements.

a. JFAC(A) MOA 'currency'/'proficiency' definitions are not the same as Aviation T&R Program 'currency'/'proficiency' definitions and are unique to the FAC(A) qualification.

b. The JFAC(A) MOA definitions and requirements as of this publication date are as follows [following list is not all-inclusive; see JFAC(A) MOA for comprehensive policy]:

(1) FAC(A) Training Definitions:

- Certified - individuals who satisfactorily complete the appropriate service academic and practical training requirements of a core FAC(A) training curriculum and complete a comprehensive assessment may be granted FAC(A) certification.
- Qualified - a certified FAC(A) who has maintained currency by achieving the established minimum recurring training and assessment requirements in a specific aircraft type/model/series.
- Control - consists of at least one aircraft attacking a surface target. The control begins with a CAS briefing (the 9-line is the JP 3-09.3 standard) from a FAC(A) and ends with either an actual/simulated weapons release or an abort on a final attack run. No more than two controls can be counted per CAS briefing per target.

(2) To be certified as a FAC(A), the individual must conduct a minimum of 12 controls (8 Type I)*. Four of these controls must have CAS asset expend live or training ordnance**. One of the 12 controls must be conducted at night***. Upon successful completion of a comprehensive evaluation, the individual may be granted a FAC(A) certification.

(3) Proficiency will be maintained by controlling a minimum of 6 controls in a six-month period (4 of these 6 controls must be Type I, 1 control must be at night***, and at least 1 must control an asset that expends ordnance**).

(4) Currency will be maintained by conducting a minimum of 2 controls every 90 days. Failing to meet either proficiency or currency minimum requirements will result in a FAC(A) being non-qualified. FAC(A)s will satisfy their currency requirements with ground units or TACPs whenever possible.

(5) Failing to meet either proficiency or currency minimum requirements will result in a FAC(A) being non-qualified. To regain qualification, a FAC(A) must complete a requalification program IAW Service Directives that addresses the shortfalls from the previous six months (see paragraph 303.5.a.1). FAC(A)s who are unqualified for 18 consecutive months must regain qualification by completing a Service approved refresher syllabus (see paragraph 303.5.a.2) and a minimum of 6 controls (4 Type I, one of the six at night***, and at least 1 controlling an asset expending ordnance**).

Upon successful completion of a comprehensive re-qualification, the individual will be re-qualified as a FAC(A).

* A minimum of 8 of the controls must be fixed-wing.

** If units are precluded from completing requisite training due to local, host nation, or range restrictions, those portions of certification may be waived until the unit returns to CONUS or deploys to suitable environment.

*** Units deployed to or stationed at extreme latitudes (>49 deg) may waive the night control for certification until return to home station where night sorties can be executed. If units are precluded from completing requisite training due to local, host nation, or range restrictions, those portions of certification may be waived until the unit returns to CONUS or deploys to suitable environment.

5. Loss of FAC(A) Qualification. Failure to meet JFAC(A) MOA proficiency or currency requirements, or loss of proficiency (delinquent refly factor) for all associated FAC(A) qualification events [per paragraph 202.8.b.(1)], constitutes loss of the FAC(A) qualification.

a. FAC(A) Regualification

(1) Aircrew who have lost the FAC(A) qualification due to failure to meet JFAC(A) MOA Proficiency or Currency requirements shall regain the FAC(A) qualification by successfully completing events as delineated in the appropriate T&R syllabus under the supervision of a qualified FAC(A). At a minimum, such aircrew must complete the number and category (appropriate night, control type, ordnance, etc.) of controls the individual failed to accomplish during the appropriate Currency or Proficiency period (Currency - 2 controls in 90 days. Proficiency - 6 controls in a six month period; 4 of these 6 controls must be Type I, 1 control must be at night, and at least 1 must control an asset that expends ordnance).

(2) Aircrew who have lost the FAC(A) qualification due to loss of proficiency (delinquent refly factor) for all associated FAC(A) qualification events [per paragraph 202.8.b.(1)], or who have been FAC(A) unqualified for 18 consecutive months per the JFAC(A) MOA, shall regain qualification by completing the appropriate Refresher FAC(A) syllabus under the supervision of a FAC(A)I and conduct a minimum of 6 controls (4 of these 6 controls must be Type I, 1 control must be at night, and at least 1 must control an asset that expends ordnance).

6. FAC(A) Documentation

a. Units shall maintain aircrew FAC(A) qualification letters, FAC(A)I designations letters, FAC(A) event ATFs, and FAC(A) academic training courses completed in Individual Performance Records per Chapter 2.

b. Units shall maintain a record of controls for all aircrew conducting FAC(A) training. At a minimum, the following information shall be included in the record

FORWARD AIR CONTROLLER (AIRBORNE) MISSION LOG FOR JOHN Q. PUBLIC								
DATE	RANGE NAME AND LOCATION	NUMBER AND A/C TYPE	TYPE OF ORDNANCE	NUMBER OF CONTROLS	TYPE OF CONTROL/ DAY/NIGHT*	CONTROLLER'S SIGNATURE	SUPERVISOR'S INITIALS	REMARKS
02 Feb 2001	Coleman, Ft Bragg NC	2 x A-10s	30MM MK-82	1	1/IR/N			
28 Feb 2001	Manchester, Ft Bragg NC	2 x F-16s	Dry	4	2/-/D			
10 Mar 2001	Shoal Creek, Ft Hood TX	2 x A-10s	BDU-33	2	1/LD/D			
22 Mar 2001	Coleman, Ft Bragg NC	2 x A-10s	AGM-65B	1	1/LD/N			
*This column should be completed in the following order: Type of Control/Type of Mark/Day or Night Mission. <u>Controls</u> : Type 1 Control = 1, Type 2 Control = 2, Type 3 Control = 3; <u>Marks</u> : Laser Designation = LD, IR = IR, White Phosphorous = WP, Red Phosphorous = RP, Illume = IL, Indirect Fire or Artillery = IF, No Mark = NA, Direct Fire = DF, Talk On = TO; Day = D and Night = N. Example: a Type 1 CAS mission using illume on deck during the daytime would be annotated as 1/IL/D.								

of controls: 1) Date of controls; 2) Number of controls; 3) Type of control; 4) Day or night; 5) Ordnance used or simulated; 6) Type of aircraft controlled (fixed or rotary wing). The CAS log contained in the JFAC(A) MOA is the recommended format to record controls (See Figure 3-1).

Figure 3-1.--FAC(A) CAS Mission Log.

NAVMC 3500.14
3 Jul 07

CHAPTER 4
CORE SKILL INTRODUCTION TRAINING

	<u>PARAGRAPH</u>	<u>PAGE</u>
CORE SKILL INTRODUCTION TRAINING OVERVIEW	400	4-3
AIRCREW CORE SKILL INTRODUCTION PRODUCTION PROCESS	401	4-3
FRS TRAINING CAPACITY	402	4-6
FRS TRAINING REQUIREMENTS	403	4-8
AVIATOR PRODUCTION PLAN	404	4-10
AIRCREW CORE SKILL INTRODUCTION REFRESHER TRAINING	405	4-11
ASSESSMENT AND REPORTING	406	4-13

FIGURE

4-1	FRS PPF PLANNING ASSUMPTIONS.	4-7
4-2	AIRCREW REFRESHER TRAINING MATRIX	4-13

NAVMC 3500.14
3 Jul 07

CHAPTER 4

CORE SKILL INTRODUCTION TRAINING

400. CORE SKILL INTRODUCTION TRAINING OVERVIEW

1. Definitions. Core Skill Introduction training consists of 100 level T&R training. Core Skill Introduction Basic POI training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core skills. Core Skill Introduction Refresher POI training include fundamental aircraft/system re-familiarization training. Core Skill Introduction Series Conversion POI training includes fundamental training required to fly/operate a new model/series aircraft/system that has significantly different aircraft or weapons systems characteristics. Core Skill Introduction Transition POI training includes fundamental training required to fly/operate a new type aircraft/system.
2. Marine Corps Fleet Replacement Squadrons (FRS), aviation ground/MACCS schools, civilian aviation schools, and CMC designated operational commands conduct Core Skill Introduction training per community T&R manuals.
3. Core Skill Introduction training shall equal 60 percent CRP. Personnel should be scheduled to complete 100 level T&R events in sequential order to the greatest extent possible.
4. Commands responsible for overseeing Core Skill Introduction training shall provide a training environment where other billet responsibilities do not detract from that training.

5. Core Skill Introduction Training Waivers/Deferments

a. Waived Syllabus Events. A commanding officer of an FRS/Core Skill Introduction training unit may waive one event for Transition/Model Conversion/Series Conversion individuals, or individuals assigned to Refresher POIs when, in the CO's judgment, the previous experience or performance of an individual satisfies the requirement of the particular event. Basic T&R events shall not be waived for initial accession personnel. Waived events must be annotated in the IPR. Waivers for multiple events or complete stages of training shall be submitted via message to CG TECOM (ATB) for review and authorization.

b. Deferred Syllabus Events. A commanding officer of an FRS/Core Skill Introduction training unit may defer one event for a student to operational units when, in the CO's judgment, a lack of a logistic support or training assets requires temporary exemption. Deferral of multiple events and/or complete stages of training require authorization from CG TECOM ATB. Gaining operational units must complete deferred training events in strict compliance with T&R event requirements. Training or NATOPS Officers shall annotate all deferred events in the IPR prior to the individual's transfer.

NOTE

The remaining paragraphs of this chapter pertain only to aircrew (remaining chapter policy is not applicable to aviation ground personnel).

401. AIRCREW CORE SKILL INTRODUCTION PRODUCTION PROCESS

1. Annual Core Skill Introduction Production Cycle

a. Training Capacity. Training squadrons calculate and submit estimated annual training capacities for subsequent fiscal years to Aviation Training Branch

(ATB), Training and Education Command (TECOM) NLT 31 July. CG TECOM (ATB) validates and approves training capacity estimates.

b. Training Requirements. CG TECOM (ATB) consolidates all Marine Corps annual Core Skill Introduction training requirements from appropriate agencies and submits them to DC Aviation Plans and Policies (APP) and the Office of the Chief of Naval Operations (OPNAV) NLT 15 July. OPNAV publishes Navy and Marine Corps aviation training production requirements in the Naval Aviation Training Requirements Letter (TRL) NLT 31 July.

c. Aviator Production Plan. Chief of Naval Aviation Training (CNATRA), FRSS, CG TECOM (ATB), OPNAV, and BUPERS work together to develop the Integrated Production Plan (IPP) which defines the planned monthly input and output for every phase of Naval Aviator and Enlisted Aircrew production, API through FRS. The IPP is released NLT 1 October.

d. Execution. The training units execute Core Skill Introduction training IAW the IPP throughout the fiscal year.

e. Assessment. CNATRA, CG TECOM (ATB), and Task Groups (Tactical, NFO, Rotary, Multi-Engine, Primary, and Enlisted Aircrew) conduct analysis of how the production process at each phase of Naval Aviator training is progressing via monthly, quarterly, and semi-annual meetings and conferences throughout the year.

2. Naval Aviator Production Process (NAPP)

a. NAPP is a Chief of Naval Operations (CNO) initiated program designed to focus on improving the process of producing first tour Naval Aviators (NA), Naval Flight Officers (NFO) and Naval Aircrew (NAC) by targeting extended Time-To-Train (TTT) and by identifying and removing barriers to production. NAPP is established and defined in OPNAVINST 3500.31 and in the NAPP SOP.

(1) TECOM(ATB) NAPP Representation. CG TECOM (ATB) shall remain actively engaged in the NAPP providing USMC representation in all Task Groups (TGs). CG TECOM (ATB) provides a unified USMC position to CNAF (CNATRA) regarding NAPP issues.

(2) Wing NAPP Representation. Respective wing commanders shall appoint an officer as the Wing NAPP Representative to serve as a liaison between CG TECOM (ATB) and the FRS and to serve in the Production Planning Factor (PPF) validation/approval chain.

(3) Squadron NAPP Representation. Each FRS or designated Core Skill Introduction training unit shall appoint an officer and an enlisted aircrewman (if appropriate) as NAPP Representatives. Squadron NAPP representatives are responsible for NAPP Integrated Production Data Repository (NIPDR) inputs, PPF development and submission, representation at monthly TG meetings and semi-annual Production Alignment Conferences (PAC), and other issues relating to the NAPP.

b. The Naval Aviation Production Team (NAPT) is chartered by Commander, Naval Air Forces and chaired by Commander, Naval Air Training (CNATRA) to oversee NAPP efforts that cover the entire process from "street to fleet." The NAPT consists of all stakeholders that contribute to the production of Naval Aviators and Naval Aircrew; including Navy Headquarters representatives, OPNAV, CG TECOM (ATB), MATSGs, and TGs representing each aviation community (primary, rotary, maritime, tactical, NFO, and Naval Aircrew). The FRSS play a key role in the NAPT as members of their respective TGs.

3. Command Relationships

a. CMC will allocate aircraft, material, and personnel to meet current and anticipated long range USMC training requirements. CMC (MMOA-2) will staff FRS flight instructor billets to the ASR. The optimum tour for a flight instructor is 36 months. CMC (MMOA-2) regards all tour lengths shorter than 24 months as an exception to this policy.

b. CG TECOM is responsible for managing training and education requirements of the Total Force.

(1) ATB is responsible for managing Core Skill Introduction training policy and requirements, tasking FRSS with training requirements, coordinating class schedules and seats in Marine Corps Training Information Management System (MCTIMS), and monitoring Core Skill Introduction training progression. CG TECOM (ATB) is the approval authority for FRS training. Operational units shall submit requests for Core Skill Introduction training by message. CG TECOM (ATB) serves as an advocate for FRSS, aviation ground/MACCS schools, and CMC designated operational commands conducting Core Skill Introduction training. As such, FRSS have been granted DIRLAUTH with CG TECOM (ATB) regarding all training matters.

(2) MATSGs support ATB by locally monitoring issues affecting USMC aviation training and providing face-to-face liaison with CNATRA. Responsibilities include promoting Marine Corps Aviation interests as representatives to CNATRA, serving as Marine Corps advocates at Navy FRSS, monitoring CNATRA production to meet FRS requirements, acting as the conduit for FRS inputs to CNATRA Curriculum Review Boards.

c. MARFOR commanders support CG TECOM (ATB) for Core Skill Introduction training.

d. Wing commanders have OPCON of subordinate FRSS and are responsible directly to their respective MARFOR commanders for execution of Core Skill Introduction training responsibilities.

(1) Wing commanders are responsible for ensuring FRSS and designated operational commands under their authority receive the necessary support and assets to accomplish their training mission.

(2) Wing commanders shall not task FRSS with flights/requirements that do not contribute to student training. Examples of these types of flights include the following: demonstration flights, staff flight time, static displays, VIP/administrative/logistic flights, and certain wing FRAGs. Any additional tasking that could impact an FRS's ability to make its annual training mission shall be requested via DMS message to CG TECOM (ATB).

e. Group commanders shall provide FRSS with local maintenance and supply support on an equal basis with collocated operational squadrons.

(1) Commands responsible for overseeing Core Skill Introduction training shall provide a training environment where other billet responsibilities do not detract from that training. Individuals undergoing 100 level training should not be assigned unit T/O billet responsibilities or collateral duties until such training is complete.

(2) Commanders of operational squadrons conducting Core Skill Introduction training shall balance 100 level training responsibilities with operational responsibilities. Core Skills Introduction training will normally receive priority during peacetime operations.

(3) CMC designated operational commands authorized to conduct aircrew Core Skill Introduction training are as follows:

(a) MAG-24. MAG-24 is authorized to conduct CH-53E to CH-53D Series Conversion and CH-53D Refresher Core Skill Introduction training per the CH-53 T&R Manual.

(b) VMFT-401. VMFT-401 is authorized to conduct F-5 Basic (Conversion) and Refresher Core Skill Introduction training per the F-5 T&R Manual.

(c) VMGR-152. VMGR-152 is authorized to conduct KC-130F/R and KC-130J Basic, Series Conversion, and Refresher Core Skill Introduction training per the KC-130F/R/T and KC-130J T&R Manual.

(d) VMGR-252, VMGR-352. VMGR-252 and VMGR-352 are authorized to conduct KC-130J Basic, Series Conversion, and Refresher Core Skill Introduction training per the KC-130J T&R Manual.

(e) VMGR-234, VMGR-452. VMGR-234 and VMGR-452 are authorized to conduct KC-130T Basic, Series Conversion, and Refresher Core Skill Introduction training per the KC-130F/R/T T&R Manual.

(f) VMX-22. VMX-22 is authorized to conduct MV-22 Basic, Transition, and Refresher Core Skill Introduction training per the MV-22 T&R Manual.

(4) CMC has authorized contract vendors to conduct Operational Support Aircraft (OSA) aircrew Core Skill Introduction training.

402. FRS TRAINING CAPACITY

1. Proper management of Marine Corps aviation production requires that CG TECOM (ATB) continually reconcile FRS training requirements with FRS training capacity. Total training capacity of a squadron is calculated in terms of total numbers of Basic POI students a squadron can train per year, assuming the squadron only has to produce Basic POI students. CG TECOM (ATB) utilizes two methods to calculate training capacity at an FRS: the Replacement Aircrew (RAC) Equivalency Model and Production Planning Factors (PPFs). Although originally derived from the RAC Equivalency Model, it must be understood that the term RAC Equivalent (RE) is used in both the RAC Equivalency Model and PPFs to define capacity. The term RAC Equivalent means one complete Basic POI. If a squadron has a total capacity of 30 Basic POI students per year, then the squadron's capacity is 30 RE. To compute RE in PPFs, the CAT II-V requirements must be zeroed out and only CAT I requirements entered. The comparative capacity of a squadron in terms of the other POIs will be covered in paragraph 402.2.

a. RAC Equivalency Model. The RAC Equivalency Model can be utilized to estimate FRS training capacity based solely on average aircraft assigned and average monthly utilization rate.

(1) Total Flight Hours per RAC Equivalent. The sum of the T&R 100 level Basic POI hours and an overhead factor (usually about 20 percent of the syllabus hours) define the total flight hours per RAC equivalent. The overhead factor is a "cost of doing business" included to allow for required flights to conduct FRS training. Overhead flights include the following: IUT flights, incomplete flights, instructor NATOPS/instrument certifications, warm-up flights, post maintenance flights, ferry flights, and student syllabus refly. For example, if the total Basic syllabus hours equal 100, the total flight hours per RAC equivalent may be 120 hours ($100 \times .20$). Actual Squadron overhead rates are contained in the Syllabus Overhead Allowance and Attrition Rates Letter released annually by OPNAV.

(2) Average Aircraft Assigned. Average aircraft assigned is the average number of aircraft expected to be in an "A" status for the year.

(3) Planned Aircraft Utilization Factor. The planned aircraft utilization factor is the number of hours a squadron plans to fly each aircraft per month, based on historical data, parts, and maintenance personnel available. WSPD or OP-20 limited utilization factors are not applicable.

(4) Training Capacity. FRS training capacity (estimated in terms of RAC Equivalency) can be determined by multiplying the average aircraft assigned, the monthly utilization factor, and 12 months (the product equals the estimated total annual flight hours for the squadron); then dividing this product by the total flight hours per RAC equivalent. If the FRS average number of aircraft assigned is 10, and the planned utilization factor is 30 hours, and using 12 months, the product is 3600 (10 x 30 x 12). Dividing 3600 by the total flight hours per RAC equivalent (i.e., 120 hours from paragraph (1) above) yields the FRS training capacity of 30 RE (3600/120 = 30).

b. Production Planning Factors (PPF)

(1) Where the RAC Equivalency Model calculates capacity based solely on an average monthly aircraft utilization factor, PPFs calculate capacity based on actual unit training days available, instructor manning and availability, daily aircraft availability, and simulator availability. The PPF system can also calculate backwards to facilitate identification of resource requirements in terms of instructors, aircraft, simulators, and flight hours needed to accomplish annual training requirements. PPFs provide the individual FRS, the Wing Commander and HQMC with a more detailed program planning and resource requirement determination process. PPFs are replacing the previously described RAC equivalency model as the primary tool for estimating capacity and resource shortfalls.

(2) OPNAVINST 3500.31 governs the utilization of PPFs with the exception of USMC approved planning assumption values. USMC FRSs will use the following planning values when submitting annual calculations:

Planned Annual Training/Fly Days	198 Days/Yr
Average Instructor Workday	8 Hrs/Day
Average Aircraft Workday	12 Hrs/Day
Pilot & NFO Instructor Availability	66 Percent
Flight Overhead Rates (Percent)	OPNAV ltr 3500 Ser N882B
Schedule Efficiency Index (Peacetime)	100 percent

Figure 4-1.--FRS PPF Planning Assumptions.

(3) FRS NAPP representatives shall submit squadron PPFs annually via WebPPF (<http://www.nipdr.net/>) through their USMC chain of command to CG TECOM (ATB) no later than 31 July. Submissions shall cover a three year period.

(4) RAC equivalency can be computed by entering double the anticipated CAT I requirement into WebPPF and entering zeroes for CAT II-V requirements. Doubling is necessary because the WebPPF model computes capacity up to, but no more than the entered requirement. For example, if a units actual capacity is 60 RE, but the CAT

I requirement entered in WebPPF is only 50, WebPPF will compute the squadron capacity to be 50.

(5) Marine Corps FRSS shall utilize PPFs as the source document to identify current and projected training requirement shortfalls to Wing (resource sponsor), CG TECOM (ATB) (FRS advocate), and CMC (resource provider).

(6) CG TECOM (ATB) shall provide validation and approval of Marine Corps FRS PPF submissions.

2. Managing the Load Plan. Regardless of whether the RAC Equivalency Model or PPFs are used to compute the total training unit capacity, production managers can take that capacity in terms of Basic POI students and compute relative capacities in terms of other POIs.

a. RAC Equivalency (RE) Factor. RE Factors are critical in managing and adjusting training load plans while remaining within training unit capacity.

(1) A POI's RE Factor is determined by computing the ratio of the total 100 level POI syllabus hours, including instructor aircraft hours for multi-plane flights, over the total 100 level T&R syllabus hours of the Basic POI.

For example:

Aircraft T/M/S:	CH-XX
T&R Basic syllabus hours:	60
T&R Basic syllabus hours for flights requiring a separate instructor aircraft:	40
<u>Total Basic syllabus hours:</u>	<u>100</u>
T&R Refresher syllabus hours:	30
T&R Refresher syllabus hours for flights requiring a separate instructor aircraft:	25
<u>Total Refresher syllabus hours:</u>	<u>55</u>
CH-XX Refresher RE Factor:	$55/100 = .55$

(2) For Naval Flight Officers (NFOs) and Naval Aircrew (NAC), CG TECOM (ATB) computes RE Factor in a similar manner - as a decimal fraction of the Basic pilot POI using only those NFO/NAC flights that cannot be accomplished concurrently with a student pilot syllabus flight.

b. If the annual Basic POI training requirement for an FRS is 26 students and the FRS capacity is determined to be 30 RE, the squadron would have a remaining capacity of 4 RE for 100 level Transition, Series Conversion, and Refresher training ($30 - 26 = 4$). Using the above example and assuming no Transition or Series Conversion training requirements existed for the year: One could determine the Refresher training capacity by dividing the remaining RE capacity (4) by the Refresher RAC factor (.55), to obtain 7.3 Refresher students ($4/.55 = 7.3$).

403. FRS TRAINING REQUIREMENTS

1. Marine Corps Aviation production requirements are developed based on fleet requirements and are independent of FRS capacities.

2. CG TECOM (ATB) is responsible for consolidating MPP, ASM, MMOA, Security Cooperation Education and Training Center (SCETC), and 4th MAW inputs and submitting annual USMC FRS training requirements to HQMC APP and OPNAV. CG TECOM (ATB) will release an annual message NLT 31 August to the MARFORs, Wings, FRSS and MATSGs

publishing the USMC FRS training requirements for the next fiscal year and projections for the subsequent seven years.

3. OPNAV consolidates all Navy and Marine Corps aviation training requirements in the annually released (NLT 30 September) Training Requirements Letter (TRL). The TRL provides an eight year outlook and serves three primary purposes:

a. As a long term budget planning document to ensure effective budget planning and resource allocation during the development of resource sponsors Program Objective Memorandums (POM) or Program Reviews (PR).

b. Provides an updated production requirement for the execution year. Adjustments are necessary due to the dynamic nature of the pilot, flight officer and enlisted aircrew end strength requirement.

c. Provides the USMC Fleet requirement to the CNATRA managed Naval Aviator Production Process. The Fleet requirement is the foundation for development of the Integrated Production Plan (IPP).

4. Annual Pilot Training Requirement (PTR), Naval Flight Officer Training Requirement (NFOTR) and Aircrew Training Requirement (ACTR) are grouped by types of students (listed below), indicating the source where the student came from. The Category listed in parenthesis correlates the type of student to the training syllabus length. Training requirements for each type are obtained from the agencies listed.

a. Initial Accession. Initial accession (Category I) aviator and NAC production requirements are generated by MPP based upon the existing Authorized Strength Report (ASR)/ Grade Adjusted Recapitulation (GAR) and the Year-Group-Steady-State (YGSS) model.

b. Transition. Transition (Category I) aviator and NAC production requirements are generated by ASM based upon needs of the fleet or as directed by HQMC (DC AVN).

c. Conversion. Conversion (Category II) aviator and NAC production requirements are generated by ASM based upon needs of the fleet or as directed by HQMC (DC AVN).

d. Refresher. Refresher (Category III) aviator production requirements are generated by MMOA based upon planned assignments and time out of the cockpit.

e. Modified Refresher. Modified Refresher (Category IV) aviator production requirements are generated by MMOA based upon planned assignments and time out of the cockpit.

f. Safe-for-Solo Programs. Safe-for-Solo programs (USN Category V) pilot production requirements are generated by MMOA based upon planned assignments and time out of the cockpit.

g. Foreign. Foreign aircrew are based upon Foreign Military Sales (FMS) requirements. Foreign student POI requirements may be anything from a Category I to a Category V. Annual training requirements are generated by the Security Cooperation Education and Training Center (SCETC) under CG TECOM.

5. CG 4th MAW shall submit an estimate of FRS training requirements by T/M/S and POI for the next 3 fiscal years to CG TECOM (ATB) by 31 July annually.

6. FRS flight hours are programmed by CG TECOM (ATB) and submitted to OPNAV via the TRL. FRS flight hours are derived from the annual training requirements, syllabus flight hours and overhead data. CG TECOM (ATB) shall ensure OPNAV has accurate syllabus flight hours and overhead data to compute FRS flight hour requirements. Flight hour management is the responsibility of the respective wing commanders.

404. AVIATOR PRODUCTION PLAN

1. Integrated Production Plan (IPP)

a. The IPP is the annual reconciliation of all NAPP training and the official plan for the NAPP to meet fleet aviation production requirements. It defines the required monthly input and output for each phase of NAPP training, API through FRS. The document is owned and managed by CNATRA.

b. The IPP is developed on a pull system from the top down, where each stage of aviation training, starting with the FRSs, defines their monthly input requirements to meet output requirements. Once FRSs have solidified their plans in the IPP, CNATRA works backwards through each stage of training, from Advanced back to API, developing the monthly flow of Naval Aviation students into the IPP. This process integrates each stage's outputs with the subsequent stage's input requirements.

2. FRS Summit

a. The purpose of the FRS Summit is to provide Marine Corps FRSs a forum to address training issues and raise awareness of all participants to issues impacting Marine Corps aviation training. It is an opportunity for Marine Corps Aviation to address any problems with the production plan prior to the Production Alignment Conference.

b. Attendees should include representatives from each FRS or equivalent training unit that produces Marine Corps aviators, the MATSGs, HQMC agencies, OPNAV, and senior Marines from CNATRA and CNATT.

c. ATB hosts a Fall and a Spring FRS Summit each year.

(1) The focus of the Fall FRS Summit is to assess current fiscal year aviation production, confirm plans to meet the next fiscal year's aviation production requirements, address training issues impacting aviation production, develop or modify mitigation strategies, and solidify an overall Marine Corps aviation production course-of-action before attending the Fall Production Alignment Conference. Prior to the Summit, FRSs will use the next fiscal year's training production requirements to develop a Fiscal Year Load Plan and any training requirement conflicts with FRS capacity will be documented and prepared for brief at the Summit.

(2) The focus of the Spring FRS Summit is to conduct a mid-year review, focusing on updating training issues impacting aviation production and verifying progress and effectiveness of mitigation strategies. Mitigation strategies will be developed and/or modified as necessary and the overall Marine Corps aviation production course-of-action will be updated prior to the Spring Production Alignment Conference.

d. Results of the FRS Summits are released by ATB in an After-Action message which lists issues and mitigation strategies and identifies tasks for specific agencies.

3. Production Alignment Conference (PAC)

a. CNATRA hosts a PAC twice per year. The PAC provides a forum for FRS, Task Group (Primary, Tactical, Rotary, Multi-Engine, NFO, and Enlisted Aircrew), CNATRA production managers, HQMC, CNAF, CNAL, and BUPERS representatives to assess and resolve Integrated Production Plan issues or discrepancies.

b. Attendees include the NAPP Officers from each FRS, CNATRA and CNATT staff, and representatives from ATB, MATSGs, HQMC, CNAF, CNAL, OPNAV, and BUPERS.

c. The focus of the Fall PAC is to assess current fiscal year aviation production, coordinate as Task Groups on plans to make up any current year shortfalls/meet the next fiscal year's aviation production requirements, and to finalize the FRS level Integrated Production Plan.

(1) Prior to the Fall PAC, Task Group and FRS production managers develop a draft of the FRS level IPP which is submitted to CNATRA. The intent is for CNATRA to have enough time to develop an initial draft of the entire IPP before the PAC.

(2) During the PAC, issue resolution and changes to the higher levels of the IPP may occur. Any changes can take time to reconcile down through API, so the IPP may or may not be completed during the PAC.

d. The result of the PAC is a finalized IPP that is published by CNATRA on its website.

4. Marine Corps Training Information Management System (MCTIMS)

a. MCTIMS is a web-based training management system that consolidates the functions of and replaces the Training Requirements and Resource Management System (TRRMS) and By-Name-Assignment (BNA). It is the user interface that allows all training schools to program dates to respective classes and seats.

b. Manpower/training managers at all levels in the Marine Corps can log into MCTIMS, look up courses and dates, and assign Marines to training seats in order to generate orders. If a course is funded by TECOM Financial Management (FM), name assignment in MCTIMS has to be completed before appropriation data can be requested. Course seat management, including schedule building and name assignment, can be accessed via the Student Registrar submenu in MCTIMS. All schoolhouses training Marine Corps students are required to use Student Registrar per MCO 1553.2. For setting up access to the Student Registrar or for assistance using it, contact TECOM Formal Schools Training Branch (C4611) at DSN: 378-0071 or Comm: 703-432-0071.

c. Each FRS or equivalent Marine Corps training unit is responsible for maintaining a MCTIMS account and shall appoint a MCTIMS account manager to build and update the unit's schedule. The subsequent fiscal year's class schedules are due into MCTIMS NLT 31 August each year. Class schedules are always susceptible to change and dates can be updated in MCTIMS at any time, but preliminary schedules must be entered by 31 August in order for manpower/training managers to be able to assign students and generate orders in September for October classes. Once the official IPP is released after the Fall PAC, MCTIMS managers shall ensure class schedules in MCTIMS are updated to match the IPP.

405. AIRCREW CORE SKILL INTRODUCTION REFRESHER TRAINING

1. Pilots and NFOs who have not flown the model aircraft within the prescribed time intervals defined below (also see figure 4-2) shall complete the appropriate Core Skill Introduction Refresher training program.

a. CMC designated FRSs and operational commands shall conduct Core Skill Introduction Refresher training; such training shall be specified in individual T&R manuals and shall be equivalent to 60 percent CRP. Upon completion of Core Skill Introduction Refresher training, pilots and NFOs are normally assigned to the Refresher POI conducted at the tactical squadron.

b. Pilots and NFOs who have been selected for Transition/Model Conversion/Series Conversion shall be assigned to the appropriate Basic, Transition, or Series Conversion POI per paragraph 202.2.a, regardless of time out of cockpit.

2. Aircrew Core Skill Introduction Refresher Training Programs

a. Full Refresher Programs. Full Refresher programs, or USN CAT III syllabi, consist of appropriate ground school, simulator and training events, plus a NATOPS check in model. Pilots and NFOs returning to a DIFOP billet, who have been DIFDEN or DIFOP (out of type) for greater than 730 days shall receive Refresher/CAT III training.

b. Modified Refresher (MRF) Programs. MRF Programs, or USN CAT IV syllabi, consist of appropriate ground school/simulator training plus 10 hours of flight time and a NATOPS check in model. CG TECOM (ATB) will consider additional training for individuals in this program on a case-by-case basis when requested by the unit commander.

(1) Pilots and NFOs returning to a DIFOP billet, having previously held an MOS, having flown their type but not model aircraft within the past 485 days shall receive MRF or CAT IV training at an FRS. (Examples of this type of Refresher training are: MOS 7523 NATC T-45 instructor returning to fly an F/A-18; MOS 7565 NATC TH-57 instructor returning to an AH-1 billet; MOS 7557 NATC T-44 instructor returning to fly a KC-130.)

(2) Pilots and NFOs assigned to "Dual Control Aircraft" who have been DIFDEN or DIFOP (out of type) longer than 485 days but less than or equal to 730 days will receive MRF or CAT IV training at an FRS.

(3) Pilots and NFOs assigned to "Single Control Aircraft" who have been DIFDEN or DIFOP (out of type) for 486-730 days will receive a MRF program.

(4) Pilots and NFOs destined for PCS to 1st MAW may receive a MRF upon approval by CG TECOM (ATB). CG 1st MAW may request other tactical jet training for inbound pilots or NFOs from CMC (MMOA).

c. Safe-for-Solo Programs. Safe-for-Solo programs (USN CAT V) apply only to "Single Control Aircraft" pilots and consist of ground school, simulator training plus a NATOPS check in model. Pilots assigned to "Single Control Aircraft" who have been DIFDEN or DIFOP (out of type) longer than 365 days but less than or equal to 485 days shall receive FRS Safe-for-Solo training.

Aircrew Returning from:	Time out of Model:	Training Required:	Training Conducted at:
<u>DUAL CONTROL ACFT</u>	≤ 485 days	Per T/M/S T&R Manual	Tactical Unit
DIFDEN or DIFOP (Out of Type)	486-730 days	Modified Refresher CAT IV	FRS*
	> 730 days	Refresher CAT III	FRS*
<u>SINGLE CONTROL ACFT</u>	≤ 365 days	Per T/M/S T&R Manual	Tactical Unit
DIFDEN or DIFOP (Out of Type)	> 365 days but < 485 days	Safe-for-Solo (Pilots Only)	FRS*
	486-730 days	Modified Refresher CAT IV	FRS*
	> 730 days	Refresher CAT III	FRS*
DIFOP (In Type)	≤ 485 days	Per T/M/S T&R Manual	Tactical Unit
	> 485 days	Modified Refresher CAT IV	FRS*
* Or CMC designated operational command authorized to conduct 100 level Refresher training.			

Figure 4-2.--Aircrew Refresher Training Matrix.
CG TECOM (ATB) is approval authority for deviations from above matrix.

3. The CMC may designate HMX-1 as a Refresher training squadron for CH-53 and CH-46 aircraft in exceptional situations.

4. Commands may request Core Skill Introduction Refresher training for aircrew not covered by the previous Refresher training programs. Requesting units should make requests to CG TECOM ATB via the chain of command and should include at a minimum: reasons for the Refresher training, time out of model/type, periods of availability and type training desired.

5. CG 4th MAW may request authorization from CG TECOM (ATB) for FRS instructors to designate and annually certify 4th MAW squadron instructor pilots to provide appropriate Refresher training for SMCR aircrew on a case-by-case basis. CG 4th MAW shall coordinate such requests with HQMC [DC AVN (ASM)] and CG TECOM (ATB) via message.

406. ASSESSMENT AND REPORTING

1. Proper management of Marine Corps aviation resources requires that CG TECOM (ATB) continually evaluate FRS training requirements and resources to make short range and long range adjustments to maintain a balance between requirements and capacity.

2. FRS Reporting. Many unforeseeable factors affect the training requirements and capacity during the execution of the annual NA/NFO Training Plan via the Integrated Production Plan (IPP). The monthly FRS planning and reporting cycle allows adjustments to maintain alignment of training requirements and capacity.

a. Assessments of actual training production compared to the IPP are conducted via teleconference, VTC, or Face-to-Face briefs monthly. The system utilized to capture monthly data and generate cockpit charts for briefing and assessment is the

NAPP Integrated Production Data Repository (NIPDR). The NIPDR cockpit charts are a useful tool in evaluating FRS production performance and capability.

b. Each FRS or equivalent training unit is responsible for submitting unit production data into NIPDR by the 8th of each month. CNATRA will then generate cockpit charts from the data for briefs later in the month.

(1) Pools. The FRS reports two pools to NIPDR: Preload and Students-In-Training. The FRS Preload is an entitlement (7 weeks) defined as the number of CAT I winged pilots and NFOs that have not commenced their FRS class. This includes personnel conducting PCS moves, training en route (SERE, etc.), and at the FRS awaiting class start. The Students-In-Training (SIT) pool includes all students who have started a POI. A POI includes any ground training.

(2) Joint FRS Reporting. FRSS that train both Navy and Marine Corps students will report both Navy and Marine Corps student numbers into NIPDR each month.

c. Task Group meetings take place monthly via teleconference, VTC, or Face-to-Face meetings. Task Groups include the Commodore in charge, TG production managers, and all FRSS and equivalent training units associated with the Task Group. The focus of the meetings is to assess current production to date, identify any problems associated with meeting fiscal year training requirements, develop mitigation strategies, update long term plans, and prepare for the Naval Aviation Production Team (NAPT) meeting later in the month.

(1) TG Tactical (TGTAC)/TG Naval Flight Officer (TGNFO). TGTAC includes all Navy and Marine Corps units associated with jet aircraft pilot production. TGNFO is directly associated with jet training units and attends the same meetings, but has a separate Training Wing and Commodore in CNATRA.

(2) TG Rotary. TG Rotary includes all Navy and Marine Corps units associated with helicopter and tilt-rotor pilot production.

(3) Multi-Engine TG (METG). METG includes all Navy, Marine Corps, and Air Force units associated with Multi-Engine Fixed Wing pilot production as well as intermediate level flight training for tilt-rotor pilots.

(4) Primary Production TG (PPTG). PPTG includes all Navy and Marine Corps units associated with API and Primary pilot flight training production.

(5) TG Naval Aircrew (TGNAC). TGNAC includes all Navy and Marine Corps units associated with aircrew production.

d. The Naval Aviation Production Team (described in paragraph 401.2.b) meets monthly via VTC with a teleconference dial-in capability. The monthly meeting focuses on assessing current production to date, informing CNATRA and CNAF on problems associated with meeting fiscal year training requirements, describing mitigation strategies, and updating long term plans.

(1) CG TECOM (ATB) attends the NAPT to represent Marine Corps FRSS and Marine Corps Aviation interests. MATSGs, FRSS, and HQMC agencies are welcome to attend.

(2) Actions-In-Progress (AIPs) generated by the NAPT involving Marine Corps production will be staffed through CG TECOM (ATB).

3. Attrition/Training Delay Notification. FRSS and equivalent training units training Marine aircrew are responsible for notifying CG TECOM (ATB) of RAC attrition/delay issues that occur. CG TECOM (ATB) needs to be informed of any

student attrition or delays due to medical, legal, or performance issues. Notification shall be accomplished through the comments section in the monthly NIPDR submissions and discussion in Task Group meetings.

4. Mishap Notification

a. FRSs and equivalent training units training Marine aircrew are responsible for notifying CG TECOM (ATB) of any mishaps that occur involving RACs or impacting training production. The following PLADS shall be included on OPREP3s and MDRs: CG TECOM QUANTICO VA G3; CG TECOM QUANTICO VA ATB

b. CG TECOM (ATB) shall not be included in the privileged investigation messages. ATB does not have a permanent ASO billet on its T/O.

NAVMC 3500.14
3 Jul 07

CHAPTER 5
T&R ADMINISTRATION

	<u>PARAGRAPH</u>	<u>PAGE</u>
PURPOSE	500	5-3
SYLLABUS SPONSOR	501	5-3
T&R MANUAL DIRECTORY	502	5-3
T&R CHANGES	503	5-4
T&R REVIEW PROCEDURES	504	5-5
T&R REVIEW CONFERENCE MATRIX	505	5-7
T&R CORRESPONDENCE CHANGES	506	5-7
T&R CORRESPONDENCE CHANGE MATRIX	507	5-9
APPLICABILITY	508	5-9
T&R ADMINISTRATION MESSAGE TEMPLATES	509	5-9

NAVMC 3500.14
3 Jul 07

CHAPTER 5

AVIATION T&R ADMINISTRATION

500. PURPOSE. To provide a process for developing, updating, and staffing T&R manuals.

501. SYLLABUS SPONSOR. A syllabus sponsor is a unit that coordinates T&R changes on behalf of the applicable community in coordination with CG TECOM (ATB). Syllabus sponsors shall maintain close liaison with their respective community counterparts. CG TECOM (ATB) generally assigns sponsorship to MAWTS-1 or a training unit, but may designate a unit from the Total Force or supporting establishment for certain aircraft/systems/MOSs.

502. T&R MANUAL DIRECTORY

1. Aviation T&R syllabi are organized into a series of manuals published as Navy Marine Corps (NAVMC) Publications. Previously, T&R manuals were published as Marine Corps Orders (MCO). All T&R manuals that exist as MCOs will transition to NAVMC format during their next revision cycle. The following matrix contains a list of aviation T&R syllabus sponsors. For an up-to-date listing of T&R manuals, refer to the TECOM ATB website at <http://www.tecom.usmc.mil/atb/>.

CATEGORY	COMMUNITY/DIRECTIVE	SPONSOR
Policy	Aviation T&R Program MCO 3500.14	CG TECOM (ATB)
Procedures	Aviation T&R Program Manual NAVMC 3500.14 Ch 1	CG TECOM (ATB)
Fixed Wing	T&R Manuals	
	AV-8B NAVMC 3500.99	MAWTS-1
	EA-6B NAVMC 3500.1	MAWTS-1
	FA-18A/C/D NAVMC 3500.107	MAWTS-1
	KC-130FRT MCO P3500.88	MAWTS-1
	KC-130J MCO P3500.73 Int. App. 5 Aug 05	MAWTS-1
Rotary Wing	T&R Manuals	
	AH-1W MCO 3500.48A	MAWTS-1
	UH-1N MCO P3500.49A	MAWTS-1
	CH-46 NAVMC 3500.88	MAWTS-1
	CH-53 NAVMC 3500.89 Ch 1	MAWTS-1
	UH-1Y NAVMC 3500.XX	MAWTS-1
	AH-1Z NAVMC 3500.XX	MAWTS-1

CATEGORY	COMMUNITY/DIRECTIVE	SPONSOR
Tilt Rotor	T&R Manual	
	MV-22 NAVMC 3500.11	MAWTS-1
Operational Support	T&R Manuals	
	C-9 MCO P3500.17A Chapters 1-4	VMR-1, MCAS Cherry Point
	UC-12 MCO P3500.17A Chapters 7-8	VMR Det Iwakuni
	HH-46 (SAR) MCO P3500.61	VMR-1, MCAS Cherry Point
	HH-1N (SAR) MCO P3500.17A Chapters 13-15	H&HS SAR, MCAS Yuma
	UC-35 MCO P3500.63A	MASD New Orleans
	C-20 NAVMC 3500.96	MCAF Kaneohe Bay, HI
	F-5E/N MCO 3500.65	VMFT-401
Aviation Ground	T&R Manuals	
	Tactical Air Command Center (TACC) MCO P3500.53	MAWTS-1
	Tactical Air Operations Center (TAOC) MCO P3500.54	MAWTS-1
	Marine Air Traffic Control (MATC) NAVMC 3500.98	MAWTS-1
	Direct Air Support Center (DASC) NAVMC 3500.97	MAWTS-1
	Low Altitude Air Defense (LAAD) MCO P3500.57	MAWTS-1
	Unmanned Aerial System (UAS) MCO P3500.21A	MAWTS-1
	Meteorological Oceanographic (METOC) MCO P3500.66A	MAWTS-1
	Airfield Emergency Services (AES) MCO P3500.67	EAF - NATTC MATSG Pensacola ARFF - DOD F&ES, San Angelo, TX EAF/FES Officer, MAWTS 1
	Aviation Operations Specialist (AOS) MCO P3500.71	AOS, NATSS-1 NAS Meridian, MS

503. T&R CHANGES

1. T&R Review. A T&R review is a forum to comprehensively revise a T&R manual. T&R reviews are normally conducted via conference and produce a new version of the T&R manual (e.g. NAVMC 3500.XX"B"). T&R reviews will normally convene on a triennial schedule. However, T&R reviews may be convened as appropriate or when higher headquarters directs.

2. Correspondence T&R changes. A correspondence T&R change is a change to an existing manual between T&R reviews. T&R correspondence changes are conducted via electronic means and produce changes to existing T&R manuals (e.g. NAVMC 3500.XX, "Ch 1") or new versions as in paragraph 1 above. In some communities, this process may suffice for a complete review in lieu of a conference.

504. T&R REVIEW PROCEDURES

1. Pre-Conference Responsibilities

a. Syllabus Sponsor

(1) Conference Date. Coordinate with CG TECOM (ATB) to determine a T&R conference date.

(2) Announcement Message. Prepare and submit a draft message to CG TECOM (ATB) for release. The final message will be sent to the appropriate commands with an information copy to CMC (DC AVN). This message announces the purpose of the conference and includes the pre-conference METL review POA&M, the conference convening location/date, identifies units required to nominate voting members, and requests the submission of agenda items in "Item, Discussion/Recommendation" format. CG TECOM (ATB) will release the announcement message 90 days before the conference date.

(3) Agenda Items. Consolidate agenda items and coordinate with CG TECOM (ATB) to release a conference agenda message to MARFORs/MCIs as required, MAWTS-1, DC AVN, and all appropriate commands operating/ implementing the applicable syllabus.

b. CG TECOM (ATB)

(1) Release announcement and agenda items messages.

(2) Conference Funding. CG TECOM (ATB) shall provide appropriation data funding to voting representatives per MCO P7100.8. Additional conference representatives are encouraged to attend, but must be unit funded.

c. Commands Providing Conference Representatives

(1) Nominate representatives to CG TECOM (ATB) via message or e-mail NLT 45 days prior to the conference. Responsible commands nominating representatives are COMMARFORCOM, COMMARFORPAC, COMMARFORRES, MAW Commanding Generals, COMMARCORBASESJAPAN; MCI EAST, MCI WEST; and applicable schools as nonvoting members. Conference representatives shall be experienced in the day-to-day supervision of the applicable aviation training program being reviewed.

(2) Submit agenda items to the syllabus sponsor in Item, Discussion, Recommendation format via message NLT 45 days prior to the conference.

d. All attendees shall be familiar with agenda items and review the applicable T&R syllabus prior to the conference. Voting members shall staff agenda items and have established command positions prior to attending a conference. As front-end agenda staffing facilitates the T&R update process, syllabus sponsors should not accept additional agenda items during T&R conferences.

2. Conference Responsibilities

a. Syllabus Sponsor. Host the conference and ensure each attendee has access to a draft version of the T&R at the completion of the conference.

b. CG TECOM (ATB). Provide conference guidance to the syllabus sponsor and facilitate T&R review procedures. Ensure individual T&R manuals are developed/updated IAW this Manual.

c. Voting Members and Other Attendees

(1) Any conference attendee may recommend a specific position, but it is the voting representatives who decide T&R content. Agencies providing voting representatives include CG MCCDC, MARFORS, and MAW Commanding Generals; in addition MCI EAST, MCI WEST, and COMMARCBASESJAPAN shall also provide voting members for ATC, METOC, AES, and AOS T&R manual reviews.

(2) At the conference, voting members and attendees shall provide change recommendations as required. SMEs shall format their respective T&R manual syllabus per Chapter 6. At a minimum, members of the conference shall complete the following tasks:

(a) Evaluate the syllabus for effectiveness.

(b) Coordinate syllabus requirements with other aircraft/aviation ground communities as required.

(c) Propose changes to the syllabus in format and structure IAW chapter 6.

(d) Review/validate/modify the following:

- Unit Core Competency Information (Mission Statement/METL/Output Standards/CMMR/Qualification & Designation tables/Training Progression Models).
- Programs of Instruction.
- Syllabus/Phase/Stage information
- Syllabus events.
- Training resource requirements.
- Required T&R matrices/tables.
- T&R syllabus evaluation forms.

3. Post Conference Responsibilities

a. Syllabus Sponsor. Coordinate with CG TECOM (ATB) to prepare a conference report message to the MARFORS within 10 working days of conference completion. CG TECOM (ATB) shall release the conference report message within 10 working days of conference completion. Conference report messages shall delineate significant change recommendations and request MARFORS concurrence with the draft T&R manual.

b. CG TECOM (ATB)

(1) Coordinate with the syllabus sponsor to prepare and release, within 10 working days, a conference report message. Ensure electronic versions of draft syllabi are available.

(2) Attach MARFOR comments and forward the draft document to CMC (DC AVN), NLT 60 days after conference completion. Unresolved issues shall be forwarded to CMC (DC AVN) for decision.

(3) Upon MARFOR and DC AVN concurrence, release a message approving the T&R syllabus for interim use. Post the interim approved syllabus to the CG TECOM (ATB) website.

(4) Attach DC AVN and MARFOR comments and forward the document to CG TECOM for signature.

(5) When the NAVMC is signed by CG TECOM, release a message announcing that the NAVMC has been approved (the NAVMC replaces the interim T&R syllabus). Post the NAVMC to the CG TECOM (ATB) website. Coordinate with CMC (ARDE) to coordinate posting to the HQMC website.

c. MARFORS/MAWS

(1) MARFOR/MAW command T&R review voting representatives shall brief their respective commands on post conference results.

(2) MARFORS: Consolidate comments from subordinate units and concur or non-concur with justification to CG TECOM (ATB) via message within 45 days of the conference completion date.

(3) Failure to respond to post conference deadlines indicates concurrence with T&R draft syllabi.

d. CMC (DC AVN). Review the proposed syllabus and concur or non-concur with justification to CG TECOM (ATB) via message NLT 90 days after conference completion.

505. T&R REVIEW CONFERENCE MATRIX. The matrix below outlines and summarizes T&R Review Conference milestones and tasks:

T&R Review Milestones		
Pre-Conference Requirement	Unit(s)	By-Date
Coordinate Conference Date & Release Convening Msg	Syllabus Sponsor ATB (releases msg.)	NLT 90 days prior to conference date
Nominate Voting Reps to ATB via msg/e-mail.	MARFORS MAWS	NLT 45 days prior to conference
Submit Agenda Items to Syllabus Sponsor	All Units (As Desired)	NLT 45 days prior to conference
Publish Agenda Items	Syllabus Sponsor ATB (releases msg)	NLT 30 days prior to conference
Post-Conference Requirement	Unit(s)	By-Date
Provide Smooth Draft T&R Manual To ATB	Syllabus Sponsor	NLT 10 days after conference completion
Conference Report msg.	Syllabus Sponsor ATB (releases msg.)	NLT 10 days after conference completion
Provide Concurrence with T&R draft to ATB	MARFORS	NLT 45 days after conference completion
Forward MARFOR Comments to DC AVN	ATB	NLT 60 days after conference completion
Provide Concurrence with T&R draft to ATB	DC AVN	NLT 90 days after conference completion
Announce Interim Approval	ATB	ASAP Upon MARFOR & DC AVN Concurrence
Administrative Review	ATB	ASAP Upon MARFOR & DC AVN Concurrence
Obtain CG TECOM Signature & Publish as NAVMC	ATB	ASAP Upon DC AVN Concurrence

506. T&R CORRESPONDENCE CHANGES

1. Units recommending T&R changes shall submit proposed changes in message format via the respective MAW to the syllabus sponsor. Correspondence must include rationale for the change.

2. The syllabus sponsor shall review and forward the proposed change recommendations to all units in the respective community and CG TECOM (ATB) within

5 working days of receipt of the correspondence. If the proposed change requires coordination with another community, the originating syllabus sponsor shall also submit it to the appropriate related syllabus sponsor.

3. All units concerned shall submit their comments and recommendations to the syllabus sponsor, via the respective parent command/MAW, within 30 days of the date of the syllabus sponsor's request for comments. All comments and recommendations shall be submitted via message.

4. The syllabus sponsor shall:

a. Consolidate comments and provide CG TECOM (ATB) a smooth draft of proposed T&R changes (include update of the T&R event conversion matrix if applicable).

b. Provide CG TECOM (ATB) supporting message documentation from units providing input.

c. Coordinate with CG TECOM (ATB) to release a T&R change recommendation message to the MARFORs and CMC (DC AVN) within 45 days of the date of the syllabus sponsor's request for comments. CG TECOM (ATB) releases the message.

5. CMC (DC AVN) and MARFORs shall review the proposed T&R change and concur or non-concur with justification to CG TECOM (ATB) within 30 days of the syllabus change recommendation message release. Unresolved issues shall be forwarded to CMC (DC AVN) for decision. Upon MARFOR and CMC concurrence, CG TECOM (ATB) shall release a message approving the T&R syllabus change for interim use and post it to the CG TECOM (ATB) website.

6. CG TECOM (ATB) shall attach CMC and MARFOR comments and forward the change for CG TECOM signature as a NAVMC change. When the NAVMC change is signed, CG TECOM (ATB) shall release a message announcing the NAVMC DIR has been changed (the NAVMC change replaces the interim T&R syllabus change). CG TECOM (ATB) shall post the NAVMC change to the CG TECOM (ATB) website and coordinate with CMC (ARDE) to post the change to the HQMC website.

507. T&R CORRESPONDENCE CHANGE MATRIX. The matrix below outlines and summarizes T&R correspondence change milestones and tasks:

T&R Correspondence Change Milestones		
Task	Unit	By-Date
Request for T&R Change by msg to syllabus sponsor via MAW	Unit that requests T&R Change	NA
Forward proposed change to all applicable units for review/comment via msg.	Syllabus Sponsor	NLT 5 days after receipt of change request
Submit comments to syllabus sponsor	All units concerned	NLT 30 days after request for comments
Consolidate comments & provide ATB a smooth draft of proposed changes.	Syllabus Sponsor	NLT 45 days after request for comments
Release T&R Change Recommendation msg.	ATB	NLT 45 days after request for comments
Review Proposed Change & Provide Concurrence/Non-Concurrence with justification	MARFORS DC AVN	NLT 30 days after release of change recommendation msg
Announce Interim Approval	ATB	ASAP Upon MARFOR & DC AVN Concurrence
Administrative Review	ATB	ASAP Upon MARFOR & DC AVN Concurrence
Obtain CG TECOM Signature & Publish as NAVMC Change	ATB	ASAP Upon DC AVN Concurrence

508. APPLICABILITY. When a T&R manual update or change is approved for use, the approved version of the manual becomes the training standard for all applicable units. Units shall transition to the approved T&R syllabus as soon as practicable.

509. T&R ADMINISTRATION MESSAGE TEMPLATES. The following types of messages are provided for syllabus sponsor guidance:

<u>Sample</u>	<u>Sample Title</u>
1	T&R Conference Announcement Message
2	Agenda Item Message
3	Conference Report Message Requesting MARFOR Concurrence
4	Message Requesting DC AVN Concurrence.
5	Interim Approval Message
6	Final Approval Message

1. T&R Conference Announcement Message Sample

FM CG TECOM QUANTICO VA ATB
TO MARFORS
MAWS
INFO CMC WASHINGTON DC AVN (APP, ETC.)
MEFS
MAWTS

NAVMC 3500.14
3 Jul 07

MAG/MACG/MWSG AS REQUIRED
SQUADRONS/UNITS AS REQUIRED
HMX-1 AS REQUIRED
MSGID/GENADMIN/CG TECOM ATB/
SUBJ/CONFERENCE ANNOUNCEMENT FOR FA-18 AND AV-8 AIRCREW TRAINING AND READINESS
(T&R) SYLLABI//
REF/A/NAVMC DIR 3500.14//
REF/B/NAVMC 3500.99//
REF/C/NAVMC 3500.107//
NARR/REF A IS AVIATION T&R PROGRAM MANUAL. REF B IS AV-8B T&R MANUAL. REF C
IS FA-18 T&R MANUAL.//
POC/J. M. TILL/MAJ/TECOM ATB STANDARDS/DSN: 278-xxxx//
POC/T. S. TAYLOR/MAJ/B. D. WILD/CAPT/MAWTS-1 S-3/DSN: DSN 267-xxxx/xxxx//
POC/S. R. STRANDBERG/MAJ/MAWTS-1 S-3/DSN: 582-xxxx//
RMKS/1. PER REFS, A T&R CONFERENCE FOR STANDARDIZATION OF TRAINING SYLLABI FOR
FA-18 AND AV-8 AIRCREW WILL TAKE PLACE AT MCAS YUMA, BLD 406 (MAWTS-1), FROM
23-26 JUL 06, 0800 TO 1630 DAILY. TENTATIVE SCHEDULE LISTED BELOW:
23 JUL: OPENING RMKS, ADMIN INFO, DISC ITEMS, TACAIR STAN ITEMS, AGENDA ITEMS,
T&R CONF.
24-25 JUL: T&R CONF CONTINUED.
26 JUL: TACAIR STAN ITEMS, T&R WRAP-UP.
2. SPECIFIC T&R AGENDA TOPICS FROM UNITS OR AGENCIES ARE TO BE SUBMITTED IAW
REF A (ITEM, DISCUSSION, RECOMMENDATION FORMAT) TO (*APPROPRIATE SYLLABUS*
SPONSORS), NLT 21 JUN 06. COMMANDS OR SUBJECT MATTER EXPERTS DESIRING
DISCUSSION BRIEFING TIME ON 23 JUL MUST CONTACT SYLLABUS SPONSORS NLT 21 JUN
06. REQUEST ALL BRIEFS AND DOCUMENTS BE PREPARED USING MICROSOFT OFFICE
PROGRAMS.
3. THE CURRENT VERSION OF REFS B AND C MAY BE VIEWED IN ADOBE ACROBAT FROM
INTERNET SITE FOR AVIATION TRAINING BRANCH, TRAINING AND EDUCATION COMMAND
HOMEPAGE: xxxxxxxxxxxx
4. PER REF A, VOTING MEMBERS CONSIST OF REPS FROM THE FOLLOWING
ORGANIZATIONS:
1. COMMARFORPAC
2. COMMARFORCOM
3. COMMARFORRES
4. CG 1ST MAW
5. CG 2ND MAW
6. CG 3RD MAW
7. CG 4TH MAW
8. CG MCCDC
REPS SHOULD BE EXPERIENCED IN DAY-TO-DAY SUPERVISION OF AVIATION TRAINING
PROGRAMS AND BE ABLE TO REPRESENT THEIR COMMAND ON EACH ISSUE. FAMILIARITY
WITH THE REFS IS CRUCIAL TO THE SUCCESS OF THE CONF. CG TECOM WILL FUND TWO
VOTING REPRESENTATIVES (ONE AV-8 & ONE FA-18) FROM EACH OF THE ABOVE
ORGANIZATIONS. REQUEST MARFORS & MAWS SUBMIT ATTENDEE NOMINATIONS TO CG TECOM
NLT 21 JUN 06, VIA MSG TO CG TECOM ATB.
INFORMATION:
FULL NAME, SSN, MOS, BILLET, COMMAND, EMAIL, DSN PHONE.
5. APPROPRIATION DATA AND T&R AGENDA WILL BE PUBLISHED VIA SEPCOR.
ATTENDEES NOT LISTED IN PARA 4 WILL BE UNIT FUNDED.
6. ATTENDEES ARE RESPONSIBLE FOR TRAVEL AND BILLETING ARRANGEMENTS.
YUMA BOQ DSN: 269-3578.
7. ATTENDEES ARE RESPONSIBLE FOR COORDINATING SECURITY CLEARANCE REQUIREMENTS
FOR ENTRY INTO CONF BUILDING. MAWTS-1 SECURITY CLEARANCE POC: CAPT. HARPER,
DSN 269-xxxx; FAX 269-xxxx.
9. UNIFORM IS FLIGHT SUIT OR SERVICE EQUIVALENT.//
BT

2. Agenda Item Message Sample

FM CG TECOM QUANTICO VA ATB
TO MARFORS
MAWS
INFO CMC WASHINGTON DC (APP, ETC.)
MEFS
MAWTS
MAG/MACG/MWSG AS REQUIRED
SQUADRONS/UNITS AS REQUIRED
HMX-1 AS REQUIRED
MSGID/GENADMIN/CG TECOM ATB/
SUBJ/AGENDA ITEMS FOR FA-18 AND AV-8 TRAINING AND READINESS (T&R)
CONFERENCES.//
REF/A/MSG/NAVMC DIR 3500.14//
REF/B/MSG/NAVMC 3500.99//
REF/C/MSG/NAVMC 3500.107//
NARR/REF A IS AVIATION T&R PROGRAM MANUAL. REF B IS AV-8B T&R MANUAL. REF C
IS FA-18 T&R MANUAL.//
POC/J. M. TILL/MAJ/TECOM ATB STANDARDS/DSN: 278-xxxx//
POC/T. S. TAYLOR/MAJ/B. D. WILD/CAPT/MAWTS-1 S-3/DSN: 267-xxxx//
POC/S. R. STRANDBERG/MAJ/MAWTS-1 S-3/DSN: 582-xxxx//
RMKS/1. PER REFS, T&R CONFERENCES FOR STANDARDIZATION OF TRAINING SYLLABI FOR
FA-18 AND AV-8 AIRCREW WILL TAKE PLACE AT MCAS YUMA, BLD 406 (MAWTS-1), FROM
23-26 JUL 02, 0800 TO 1630 DAILY. TENTATIVE SCHEDULE LISTED BELOW:
23 JUL: OPENING RMKS, ADMIN INFO, DISC ITEMS, TACAIR STAN ITEMS, AGENDA ITEMS,
T&R CONF.
24-25 JUL: T&R CONF CONTINUED.
26 JUL: TACAIR STAN ITEMS, T&R WRAP-UP.
2. PER REF A, CONFERENCE VOTING MEMBERS HAVE BEEN IDENTIFIED AS
FOLLOWS:
FA-18 T&R CONFERENCE:
1. COMMARFORPAC: MAJ J. D. REED
2. COMMARFORLANT: LTCOL D. H. WILKINSON
3. COMMARFORRES: COL W. J. BLALOCK
4. CG FIRST MAW: CAPT K. T. O'ROURKE
5. CG SECOND MAW: MAJ B. A. BOND
6. CG THIRD MAW: MAJ G. A. KLING
7. CG FOURTH MAW: LTCOL R. C. MCMILLIAN
8. CG MCCDC: MAJ J. M. TILL
AV-8 T&R CONFERENCE:
1. COMMARFORPAC: COL M. R. SAVARESE
2. COMMARFORLANT: LTCOL S. R. POMARICO
3. COMMARFORRES: NA
4. CG FIRST MAW: NA
5. CG SECOND MAW: MAJ D. A. SCHLICHTING
6. CG THIRD MAW: MAJ M. C. ROBERTS
7. CG FOURTH MAW: NA
8. CG MCCDC: MAJ J. M. TILL
3. PER REF A, SUBMITTED AGENDA ITEMS HAVE BEEN CONSOLIDATED BY THE FA-18 AND
AV-8 SYLLABUS SPONSOR. CONFERENCE AGENDA ITEMS AND CURRENT VERSION OF REFS B
AND C MAY BE VIEWED IN ADOBE ACROBAT FROM THE INTERNET SITE FOR AVIATION
TRAINING BRANCH, TRAINING AND EDUCATION COMMAND HOMEPAGE: xxxxxxxxxxxx
FOLLOW LINKS OF TRAINING COMMAND, AVIATION TRAINING, DOCUMENTS, TRAINING AND
READINESS. CONFERENCE VOTING MEMBERS SHOULD ARRIVE PREPARED WITH COMMAND
POSITIONS ON AGENDA ITEMS TO FACILITATE CONDUCT OF CONFERENCES.

NAVMC 3500.14
3 Jul 07

4. APPROPRIATION DATA AND T&R AGENDA WILL BE PUBLISHED VIA SEPCOR. ATTENDEES NOT LISTED IN PARA 2 WILL BE UNIT FUNDED.
5. ATTENDEES ARE RESPONSIBLE FOR TRAVEL AND BILLETING ARRANGEMENTS. YUMA BOQ DSN: 269-3578.
6. ATTENDEES ARE RESPONSIBLE FOR COORDINATING SECURITY CLEARANCE REQUIREMENTS FOR ENTRY INTO CONF BUILDING. MAWTS-1 SECURITY CLEARANCE POC: CAPT HARPER, DSN 269-xxxx; FAX 269-xxxx.
8. UNIFORM IS FLIGHT SUIT OR SERVICE EQUIVALENT.//
BT

3. Conference Report Message Requesting MARFOR Concurrence Sample

FM CG TECOM QUANTICO VA ATB
TO MARFORS
MAWS
INFO CMC WASHINGTON DC AVN (APP, ETC.)
MEFS
MAWTS
MAG/MACG/MWSG AS REQUIRED
SQUADRONS/UNITS AS REQUIRED
HMX-1 AS REQUIRED
MSGID/GENADMIN/CG TECOM ATB/
SUBJ/FA-18 AND AV-8B TRAINING AND READINESS CONFERENCE REPORT//
REF/A/MSG/NAVMC DIR 3500.14//
REF/B/MSG/NAVMC 3500.99//
REF/C/MSG/NAVMC 3500.107//
REF/D/MSG/CG TECOM QUANTICO VA/211900ZMAY2002//
NARR/REF A IS AVIATION T&R PROGRAM MANUAL. REF B IS AV-8B T&R MANUAL. REF C IS FA-18 T&R MANUAL. REF D IS T&R CONF ANNOUNCEMENT MSG.//
POC/RILEY, P.A./LTCOL/TECOM ATB STANDARDS/TEL:DSN 278-xxxx
/EMAIL:RILEYPA@TECOM.USMC.MIL//
POC/JOHNSON, D.K./CIV/TECOM ATB STANDARDS/TEL:DSN 278-xxxx
/EMAIL:JOHNSONDK@TECOM.USMC.MIL//
POC/TAYLOR, B.D./MAJ/MAWTS-1 S-3/TEL:DSN 267-xxxx//
POC/STRANDBERG, S.R./MAJ/MAWTS 1 S-3/TEL:DSN 582-xxxx//
RMKS/1. PER THE REFS, A T&R CONFERENCE WAS HELD AT MCAS YUMA 23-26 JUL 02 TO UPDATE F/A-18 AND AV-8B AIRCREW TRAINING SYLLABI.
2. CONFERENCE MEMBERS REPRESENTING VOTING COMMANDS WERE AS FOLLOWS:
F/A-18 T&R CONFERENCE:
1. COMMARFORPAC: MAJ J. D. REED
2. COMMARFORLANT: LTCOL D. H. WILKINSON
3. COMMARFORRES: COL W. J. BLALOCK
4. CG FIRST MAW: CAPT K. T. O'ROURKE
5. CG SECOND MAW: MAJ B. A. BOND
6. CG THIRD MAW: MAJ G. A. KLING
7. CG FOURTH MAW: LTCOL R. C. MCMILLIAN
8. CG MCCDC: MAJ J. M. TILL
AV-8B T&R CONFERENCE:
1. COMMARFORPAC: COL M. R. SAVARESE
2. COMMARFORLANT: LTCOL S. R. POMARICO
3. COMMARFORRES: NA
4. CG FIRST MAW: NA
5. CG SECOND MAW: MAJ D. A. SCHLICHTING
6. CG THIRD MAW: MAJ M. C. ROBERTS
7. CG FOURTH MAW: NA
8. CG MCCDC: LTCOL P. A. RILEY

3. SIGNIFICANT CHANGE PROPOSALS TO F/A-18 AND AV-8B T&R MANUALS INCLUDE: ALIGNMENT OF TACAIR T&R TRAINING PHILOSOPHY, STANDARDIZATION OF TACAIR NSQ METHODOLOGY, REVISION OF UNIT CORE COMPETENCY REQUIREMENTS, AND ESTABLISHMENT OF FLIGHT LEADER WORKUP & EVALUATION EVENTS IN 600 LEVEL.
4. THE DRAFT F/A-18 AND AV-8B T&R MANUALS MAY BE VIEWED IN ADOBE ACROBAT FROM INTERNET SITE FOR AVIATION TRAINING BRANCH, TRAINING AND EDUCATION COMMAND HOMEPAGE: xxxxxxxxxxxxx. FOLLOW LINKS OF TRAINING COMMAND, AVIATION TRAINING, DOCUMENTS, DRAFTS.
6. PER REF A, REQUEST MARFOR ADDRESSEES CONSOLIDATE SUBORDINATE UNIT COMMENTS AND CONCUR/NON-CONCUR WITH JUSTIFICATION OF DRAFT FA-18 AND AV-8B T&R MANUALS VIA MSG TO CG TECOM NLT 13 SEP 02.//

4. Sample Message Requesting DC AVN Concurrence

FM CG TECOM QUANTICO VA ATB
TO CMC WASHINGTON DC AVN APP
INFO MARFORS
MSGID/GENADMIN/CG TECOM ATB//
SUBJ/DRAFT FA-18 T&R MANUAL//
REF/A/DOC/NAVMC 3500.14//
REF/B/MSG/CG TECOM ATB/151939Z/FEB/2006//
REF/C/MSG/COMMARFORCOM/221845Z/FEB/2006//
REF/D/MSG/COMMARFORPAC/242052Z/FEB/2006//
REF/E/MSG/COMMARFORRES/091750Z/MAR/2006//
NARR/REF A IS AVIATION T&R PROGRAM MANUAL. REF B IS MSG STAFFING DRAFT FA-18 T&R FOR MARFOR CONCURRENCE. REFS C-E PROVIDE MARFOR CONCURRENCE WITH DRAFT FA-18 T&R MANUAL.//
POC/TILL, J.M. /MAJ/TECOM ATB STANDARDS/TEL:DSN 278-xxxx
/EMAIL:JOHN.TILL@USMC.MIL//
RMKS/1. A T&R CONFERENCE FOR THE FA-18 WAS CONDUCTED AT MAWTS-1 22-26 AUG 05. PER REFS B-E, COMMARFORCOM, COMMARFORPAC, AND COMMARFORRES CONCUR WITH THE DRAFT T&R MANUAL.
2. PER REF A, REQ DC AVN APP CONCUR OR NON-CONCUR WITH JUSTIFICATION WITH THE FA-18 T&R DRAFT MANUAL.
3. THE DRAFT T&R MANUAL MAY BE VIEWED AT xxxxxxxxxxxxxxxx
SELECT "DRAFT TRAINING AND READINESS MANUALS."
4. REQ RESPOND VIA DMS MSG TO PLA CG TECOM QUANTICO VA ATB NLT 7 APR 06.//

5. Interim Approval Message Sample

FM CG TECOM QUANTICO VA ATB
TO MARFORS
MAWS
MEFS
MAG/MACG/MWSG AS REQUIRED
SQUADRONS/UNITS AS REQUIRED
MAWTS 1
HMX 1 AS REQUIRED
INFO CMC WASHINGTON DC AVN APP ETC. AS REQUIRED
MSGID/GENADMIN/CG TECOM ATB//
SUBJ/FA-18 T&R INTERIM APPROVAL//
REF/A/DOC/NAVMC DIR 3500.14//
REF/B/MSG/COMMARFORCOM/221845Z FEB 06//
REF/C/MSG/COMMARFORPAC/242052Z FEB 06//
REF/D/MSG/COMMARFORRES/091750Z MAR 06//
REF/E/MSG/CMC WASHINGTON DC APP/121505Z APR 06//

NAVMC 3500.14
3 Jul 07

NARR/REF A IS AVIATION T&R PROGRAM MANUAL. REFS B THROUGH E PROVIDE CONCURRENCE WITH DRAFT AV-8B T&R MANUAL.

POC/TILL, J.M./MAJ/TECOM ATB STANDARDS/TEL: DSN 278-xxxx
/EMAIL: JOHN.TILL@USMC.MIL//

RMKS/1. PER REFS, INTERIM VERSION OF THE FA-18 T&R MANUAL IS APPROVED FOR USE. THE FA-18 T&R MANUAL WILL BE PUBLISHED AS A NAVMC DIRECTIVE.

2. THE MANUAL IS MARKED "INTERIM APPROVED 17 APR 06" AND MAY BE ACCESSED AT
XXXXXXXXXXXXXX

3. T&R DOWNLOADS MAY BE ACCESSED AT XXXXXXXXXXXXXX

4. THE FA-18 CORE COMPETENCY RESOURCE MODEL (CCRM)/FLIGHT HOUR MODEL IS UPDATED TO REFLECT THIS INTERIM APPROVED T&R MANUAL. IT MAY BE ACCESSED AT
XXXXXXXXXXXXXX

5. REQ MAGS ENSURE DISSEMINATION TO SQUADRONS.// BT

6. Final Approval Message Sample

FM CG TECOM ATB(UC)

TO MARFORS

MEFS

MAWS

MAG/MACG/MWSG AS REQUIRED

SQUADRONS/UNITS AS REQUIRED

MAWTS 1

INFO CMC WASHINGTON DC AVN APP ETC. AS REQUIRED

HMX-1 AS REQUIRED

MSGID/GENADMIN/CG TECOM ATB//

SUBJ/FA-18 T&R MANUAL//

REF/A/DOC/NAVMC DIR 3500.14//

POC/TILL, J.M./MAJ/TECOM ATB STANDARDS/TEL:DSN 278-xxxx/

EMAIL: JOHN.TILL@USMC.MIL//

RMKS/1. PER REF A, FA-18 T&R MANUAL HAS BEEN SIGNED AS NAVMC DIRECTIVE 3500.107 DATED 25 MAY 06.

2. IT MAY BE ACCESSED ON THE ATB WEBSITE:

XXXXXXXXXXXXXX

SELECT "TRAINING & READINESS MANUALS," "FIXED WING TRAINING AND READINESS MANUALS."

3. T&R DOWNLOADS HAVE BEEN UPDATED TO REFLECT THE FOLLOWING CHANGES: AA-263 REFLY INTERVAL CHANGED TO REFLECT A 365 DAY REFLY INTERVAL VICE AN *; NS-253 GOAL CHANGED TO REFLECT LOW ANGLE POP-UP ADDITION, PREREQUISITE CHANGED TO AS-239 VICE AS-237, AND 3 BDU-48'S ADDED TO ORDNANCE REQUIREMENT. THE DOWNLOADS ARE LOCATED ON THE ATB WEBSITE:

XXXXXXXXXXXXXX

4. THIS NAVMC DIRECTIVE IS THE ONLY APPROVED FA-18 T&R MANUAL. ENSURE ALL PREVIOUS VERSIONS/INTERIM VERSIONS ARE REPLACED WITH THE DIRECTIVE LISTED ABOVE.

5. REQUEST MAGS ENSURE DISSEMINATION TO SQUADRONS.// BT

CHAPTER 6

TRAINING AND READINESS SYLLABUS STRUCTURE

	<u>PARAGRAPH</u>	<u>PAGE</u>
PURPOSE	600	6-3
T&R STRUCTURE AND CONTENTS	601	6-3
T&R UNIT REQUIREMENTS	602	6-3
INDIVIDUAL T&R REQUIREMENTS	603	6-9

NAVMC 3500.14
3 Jul 07

CHAPTER 6

TRAINING AND READINESS SYLLABUS STRUCTURE

600. PURPOSE

1. The purpose of this chapter is to provide guidance on how to develop or revise an aviation T&R manual. Specifically, this chapter provides standardization policy for the structure, organization, and content of community T&R manuals. Community T&Rs shall adhere to the content, sequence, and format requirements delineated herein. Communities shall comply with policy in this Manual when developing or updating community aviation T&R Manuals.

2. The development or revision of a T&R manual is a time-intensive and complex process that community SMEs must understand. Factors to consider include unit and individual syllabi relationships, event complexity, conditions, R-coding, chaining, reflow, amongst others, when determining T&R requirements. The routine T&R conference procedure is to first review and/or revise unit training requirements, then do the same with individual training requirements. Specifically, SMEs should conduct a rough revision of unit CMMR information and individual T&R requirements summarized in matrices throughout each individual T&R chapter. After rough revisions are completed, T&R matrices should be compared to unit CMMR and individual Maintain CSP tables so that T&R adjustments can be made as needed. From there, SMEs should continue with revising remaining T&R required information. As a last step, ensure unit CMMR and individual T&R requirements (include the Maintain CSP tables) are accurate.

3. T&R syllabi within a community may be interrelated/dependent (particularly for crewed platforms/systems), therefore, individual T&R syllabi should always be developed in concert.

601. T&R STRUCTURE AND CONTENTS. Aviation T&R manuals shall consist of at least two chapters. The first chapter of every T&R manual delineates unit T&R. The second and subsequent chapters delineate individual training and readiness requirements for each applicable MOS/crew position within the community. The number of chapters depends on the number of MOSs/crew positions. For example, a CH-53 T&R manual has three MOSs/crew positions and therefore will have four chapters in noted order: (1) CH-53 Training and Readiness Unit Requirements; (2) Pilot; (3) Crew Chief; and (4) Aerial Observer. All paragraphs in a T&R manual shall be numbered sequentially with the first number being the chapter number and the following two numbers being the actual paragraph number within the chapter (100, 101, 102, etc).

602. T&R UNIT REQUIREMENTS

1. This section delineates Chapter 1 training and readiness unit requirements that include T&R format and Core Model requirements. Subparagraphs in Chapter 1 include applicable unit mission, METL, T/O information, Output Standards, Core Model Minimum Requirements (CMMR), and supporting matrices.

2. Every community T&R shall title chapter 1: "(Name of Community) TRAINING AND READINESS UNIT REQUIREMENTS."

3. Chapter 1 shall contain the below information in the order listed below:

Chapter 1 Required Paragraphs

- 100. (Community) TRAINING AND READINESS UNIT REQUIREMENTS
- 101. MISSION
- 102. TABLE OF ORGANIZATION
- 103. CORE METL/CORE SKILLS/OUTPUT STANDARDS MATRIX
- 104. CORE MODEL MINIMUM REQUIREMENTS (CMMR)
- 105. INSTRUCTOR REQUIREMENTS
- 106. ORDNANCE REQUIREMENTS
- 107. TRAINING RESOURCE REQUIREMENTS

Note: At minimum, each individual T&R chapter shall include above paragraphs in the order listed. It is understood that some communities may need to expound on information; therefore as long as the paragraphs appear in proper sequence, other paragraphs may be inserted. Just ensure all paragraphs are numbered sequentially.

4. **Formatting examples for each required paragraph are provided in *italics* throughout this section.**

5. Tactical aviation community T&Rs shall delineate CMMR; operational support community T&Rs are not required to delineate CMMR, but shall adhere to the remainder of unit T&R structure requirements. The paragraph provided below shall appear as the first paragraph of chapter 1 for all aviation T&R manuals.

100. (Community) UNIT TRAINING AND READINESS REQUIREMENTS. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The Aviation T&R Program represents the collaborative effort of Marine Aviation Subject Matter Experts who designed training standards to maximize combat capabilities. These standards, intrinsic in the core competency readiness metric, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards that ensure crews maintain a common base of training and depth of combat capabilities. The T&R comprises a building block approach to ensure trained crews remain ready, relevant, and fully capable of supporting the MAGTF commander.

6. Mission Statement. The unit mission statement is a general description of a unit's primary mission(s). The mission statement, combined with the unit Core METL, describes unit mission and tasks. Mission statement format shall be as follows:

101. MISSION. Support the MAGTF commander by (provide general mission description; e. g. destroying surface targets and enemy aircraft), day or night under all weather conditions during expeditionary, joint or combined operations.

7. Table of Organization (T/O) Information. Unit T/O information shall be derived from the current T/O managed by Total Force Structure, MCCDC. Community T&Rs shall list authorized personnel structure by MOS and organizational structure (number of aircraft shall be included for tactical operational flight squadrons). Units that provide standardized sub-units such as detachments or teams by T/O shall list such sub-units. T/O format shall be as follows:

a. For aviation ground communities,

(1) Each subunit shall be defined in a paragraph immediately after the T/O statement. Sample paragraph follows:

"MATC Mobile Team (MMT). An MMT is task-organized to provide initial rapid response ATC to support any MAGTF and/or combined/joint mission. MMT shall support operations to air sites and may support operations at air points or air facilities. The baseline MMT for 72-hour continuous operations without re-supply or additional augmentation to meet any MAGTF and/or combined/joint mission is a standard 6-Marine team."

(2) The minimum crew composition for each subunit shall be included in the T/O table. A list reflecting the minimum numbers for each crew position shall be listed. The T/O table below contains the example.

b. T/O format shall be as follows:

102. TABLE OF ORGANIZATION (T/O). Refer to T/O #XXXX managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength. Information below depicts (community) T/O information as of the date of this directive.

T/O for One Squadron/Unit
<u>Squadron</u> XX aircraft XX Pilots/XX Crew Chiefs
<u>Detachment</u> XX aircraft XX Pilots/XX Crew Chiefs
(Avn ground crew composition example) <u>MMT</u> 1 MATC Officer/SNCO. 3 Controllers. 1 NAVAID Technician. 1 MATC Communication Technician.
Notes: As needed.

8. Core METL/Core Skills/Output Standards Matrix

a. Unit Core METLs and Output Standards shall be reviewed and updated prior to Aviation T&R Manual Conferences (or when higher headquarters dictates) in accordance with CG MCCDC guidance (MCO 3500.26). The Core METL review shall be initiated with the T&R conference announcement message (90 days prior to conference). Core METL/Output Standards changes shall be submitted for MARFOR and DC AVN approval not later than 60 days prior to conference date. MARFOR/DC AVN approval (or disapproval) shall be obtained not later than 30 days prior to conference to enable further work associated with addition (or deletion) of METs/Output Standards to be accomplished prior to conference. No adjustments to METs or Output Standards shall occur at T&R conferences without prior approval (Defense Message System format) by MARFORs and DC/AVN.

b. Core Mission Essential Task List (METL). The unit Core METL is a standardized list of tasks a tactical unit/operational support unit must be able to accomplish during combat or contingency operations. The Core METL represents the fundamental capabilities for which a unit was designed or organized. Unit Core METLs shall be formed from Marine Corps Tactical Tasks (MCTs) contained in the Marine Corps Task List (MCTL) per MCO 3500.26. Unit METL format shall utilize MCTL numbering and verbiage, shall not be prioritized, and shall appear in numerical order as listed in the MCTL.

c. METL/Core Skills. The portion of the matrix that reflect METL and Core Skills provides the link between the unit training program and its METL by graphically depicting Core Skill links between specific community METs. At least one Core Skill must support each MET. Core Skills are specific, mission related capabilities/functional area tasks that support a unit's METL. Community SMEs shall validate/update Core Skills for all applicable MOSs during T&R syllabus reviews. Tactical flight units shall follow Core Skill standard abbreviations per Appendices A and B when applicable. If non-standard abbreviations are used, the community T&R shall include a table listing all Core Skills and associated abbreviations. Community SMEs shall determine which core skills support which MET and mark the matrix as appropriate.

d. Core METL Output Standards. Core METL Output Standards in the matrix reflect the level of performance a unit must be capable of sustaining during contingency/combat operations by MET. Core METL Output Standards are expressed in terms of required operational capability (such as required daily, sustained sortie rates) to perform each Mission Essential Task. Output standards are used to develop objective T&R mission performance standards and CMMR metrics. Units that provide standardized sub-units such as detachments or teams shall list appropriate Output Standards for each sub-unit. Examples of Aviation Ground community sub-units are detachment, team, section, etc.

e. Core METL/Core Skills Matrix/Output Standards format as follows:

103. CORE METL/CORE SKILLS/OUTPUT STANDARDS MATRIX

1. *The unit Core METL is a standardized list of tasks a tactical unit/operational support unit must be able to accomplish during combat or contingency operations.*

2. *Core skills abbreviations for this T&R syllabus are listed below. As needed.*

<i>Core Skills Abbreviation (if applicable)</i>	
<i>CORE SKILL</i>	<i>ABBREVIATION</i>
<i>Arrival/Departure Control</i>	<i>ADC</i>
<i>Approach Control</i>	<i>APC</i>
<i>Basic Tower Control</i>	<i>BTC</i>
<i>Basic Radar Control</i>	<i>BRC</i>

3. The METL/Core Skills portion of the matrix provides the link between the unit training program and its METL by graphically depicting Core Skill links between specific community METs.

4. Core METL Output Standards reflect the level of performance a unit must be capable of sustaining during contingency/combat operations by MET.

(Community) Core METL/Core Skills Matrix/Output Standards								
Mission Essential Task List		METL/Core Skills Matrix						Output Standard (Sorties/Day)
		Core Skills						
MCT	MET	AAW	CAS	FAC (A)	TAC (A)	AI	CS+	
3.2.3.2	Conduct Offensive Anti-air Warfare (OAAW)	X	X					20
3.2.5.4	Conduct Forward Air Control (Airborne) [FAC(A)]			X				16
5.3.2.7.3	Conduct Tactical Air Coordination (Airborne)				X			8
2.2.5.2.2	Conduct Multisensor Imagery Reconnaissance						X	8

9. Core Model Minimum Requirement (CMMR). CMMR establishes unit Core Skill Proficiency (CSP) and unit Combat Leadership requirements in Core Model tables (Minimum Unit Core Skill Proficiency Requirements, Minimum Combat Leadership Requirements). CMMR reflects the USMC-approved (MARFOR, DC AVN, and MCCDC) crew requirement for a unit to accomplish its Core METL and perform its Output Standards.

a. Unit CSP is defined in terms of minimum numbers of crews required to be proficient in each core skill. Core Skill Proficiency requirements shall be listed by MOS/crew position. Communities employing crew served platforms/systems shall delineate the standard crew composition required to operate the aircraft/platform/system.

b. Unit Combat Leadership requirements shall be defined in terms of number of tactical leaders required. Only those individuals designated in writing by the commanding officer count towards the requirement.

c. Units that provide standardized sub-units (detachments, teams, or a variant thereof) shall list appropriate CMMR for each sub-unit in addition to the total unit CMMR.

d. Proficiency in Core Plus Skills is not required to obtain unit CSP; however, Core Plus Skill proficiency requirements shall be listed in unit CSP attain and maintain tables to facilitate standardization.

e. SMEs shall review and revise (as appropriate) community CMMR at T&R syllabus reviews. CMMR development/revision guidance is as follows: CMMR requirements should be primarily derived from available objective information; however, operational experience and subjective judgment should be considered. For example, the community reviews its Core METL, unit Output Standards, and T/O information (authorized number of aircraft/platforms and crews). Community SMEs consider the objective information coupled with operational experience and determine that the minimum number of section leaders required to perform its Core METL per established standards is 10.

f. CMMR format shall be as follows:

104. CORE MODEL MINIMUM REQUIREMENTS (CMMR). CMMR is measured in terms of the minimum numbers of Core Skill Proficient (CSP) crews and minimum numbers of combat leaders per paragraphs 104a and 104b below:

1. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each Core Skill.

(Community) CMMR Unit CSP Requirements									
	SQUADRON			SQUADRON(-)			DETACHMENT		
Core Skill	PILOTS	Crew Chiefs	Crews	PILOTS	Crew Chiefs	Crews	PILOTS	Crew Chiefs	Crews
CS1	24	12	12	16	8	8	8	4	4
CS2	24	12	12	16	8	8	8	4	4
CS3	24	12	12	16	8	8	8	4	4
CS4	24	12	12	16	8	8	8	4	4

A standard (aircraft model/Platform) crew consists of 2 pilots and 1 crew chief. A CSP crew consists of individuals representing each crew position who have achieved and maintain Individual CSP. In order to be considered proficient in a core skill, an individual must attain and maintain proficiency in core skill events. Proficiency in Core Plus Skills is not normally required to obtain unit CSP. A unit may elect to, or be required to report a Core Plus Skill. As such, below are unit Core Plus Skill Proficiency Requirements.

(Community) Unit Core Plus Skill Proficiency Requirements									
Core Plus Skill	SQDN PILOTS	SQDN Crew Chiefs	SQDN Crews	SQDN (Minus 1 DET) PILOTS	SQDN (Minus 1 DET) Crew Chiefs	SQDN (Minus 1 DET) Crews	DET PILOTS	DET Crew Chiefs	DET Crews
CPS1	16	12	12	8	8	8	8	4	4
CPS2	12	NA	12	8	NA	4	4	NA	2
CPS3	18	9	9	10	5	5	8	4	4
CPS4	16	12	8	8	8	4	4	4	2

2. Minimum Combat Leadership Requirements. At a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews with the listed combat leadership designations.

CMMR (Unit Combat Leadership Requirements)			
DESIGNATION	SQDN PILOTS	SQDN PILOTS (Minus 1 Det)	DET PILOTS
HAC	16	12	4
SEC LDR	9	6	3
DIV LDR	6	4	2
FLT LDR	5	3	2
AMC	4	3	1

10. Instructor Requirements. This paragraph establishes the recommended number of instructors a unit should possess to support training requirements. The matrix should delineate community instructor designations. Units that provide standardized sub-units should list instructors recommended for each sub-unit, if applicable. When determining total recommended instructors, SMEs should reference MCO 3500.12 (WTPP), NATOPS, and other governing directives. Format as follows:

105. INSTRUCTOR REQUIREMENTS. A unit should possess the following numbers of personnel with the instructor designations listed in the matrix.

Instructors						
INSTRUCTOR DESIGNATION	SQDN PILOTS	SQDN PILOTS (Minus 1 Det)	DET PILOTS	SQDN C/C(A/O)	SQDN C/C(A/O) (Minus 1 Det)	DET C/C(A/O)
ARI	4	3	1	0	0	0
TERFI	6	4	2	5	3	2
DMI	3	2	1	3	2	1
NSI	5	4	1	5	4	1
AGI	0	0	0	4	3	1
WTI	3	2	1	3	2	1

11. Ordnance Requirements

a. Communities shall thoroughly review and update training ordnance requirements to reflect a unit annual ordnance training requirement.

b. Communities requiring individual ordnance training proficiency shall establish annual ordnance training requirements on a per crewmember basis.

c. Crew served platforms shall establish annual ordnance training requirements for a standard crew.

d. Communities that have a HQMC-validated ordnance model of the CCRM are not required to develop a unit/collective ordnance table.

106. Ordnance Requirements. (Insert unit/collective ordnance table, if required. A notional example follows below).

	INITIAL CREW (1)	REFRESHER CREW (2)	PROFICIENT CREW (3)
2.75" RKTS - HE/INERT	98	63	42
2.75" RKTS - WP/RP	28	28	14
2.75" RKTS - ILLUM	7	7	7
2.75" RKTS - APKWS/LOGIR	TBD	TBD	TBD
7.62MM - GAU-17	27000	15000	10500
.50 CAL - GAU-16	5800	3000	2100
7.62MM - M-240	6400	4000	2800
Chaff	400	240	210
Flares	520	340	230
PILOT (23)	7	8	8
CC/AO (36)	12	12	12
<p>General: In these calculations ordnance is always included on ordnance optional sorties, but S and S/A sorties are not included. Requirements are per individual. Assumption is that Initial/Refresher syllabus may be completed in 1 year.</p> <ol style="list-style-type: none"> 1. Initial Basic crews shall fly all 200 and 300 level events. 2. Refresher crews shall fly all R coded 200 and 300 level events. 3. Proficient crews are defined by the Core Skill Proficiency table on page 6 and their minimum annual ordnance requirements are driven by sorties in the Maintain Table. 4. Based on a full HMLA T/O of 23 UH pilots and 36 CC/AO, with the assumption that roughly 1/3 fall into each POI. 5. "Type" column indicates which aircrew factor is used to determine ordnance totals. 			

UH-1Y ANNUAL SQUADRON REQUIREMENTS					
	Type	INITIAL PILOT x 7 CC/AO x 12	REFRESHER PILOT x 8 CC/AO x 12	PROFICIENT PILOT x 8 CC/AO x 12	ANNUAL SQUADRON TOTAL
2.75" RKTS - HE/INERT	P	686	504	336	1526
2.75" RKTS - WP/RP	P	196	224	112	532
2.75" RKTS - ILLUM	P	49	56	56	161
7.62MM - GAU-17	CC/AO	324000	180000	126000	630000
.50 CAL - GAU-16	CC/AO	69600	36000	25200	130800
7.62MM - M-240	CC/AO	76800	48000	33600	158400
CHAFF	P	2800	1920	1680	6400
FLARES	P	3640	2720	1840	8200

12. Training Resource Requirements. If applicable, address any critical training resources required to achieve T&R requirements (e.g. ranges, adversary support, tanker support, etc). Objectively defining and identifying aviation training resource requirements will assist operational and HQ agencies in defining required aviation training resources. Format as follows:

107. Training Resource Requirements. If applicable.

603. INDIVIDUAL T&R REQUIREMENTS

1. This section delineates individual training requirements for each applicable MOS/crew position in the community. Each community T&R will contain at least one chapter delineating requirements for individual training.

2. Each MOS/crew position chapter shall be titled "(Primary MOS title/number) INDIVIDUAL TRAINING AND READINESS REQUIREMENTS."

3. Each individual T&R chapter in the community T&R shall contain the below information in the order listed below:

Contents

X00. INDIVIDUAL TRAINING AND READINESS REQUIREMENTS
X01. TRAINING PROGRESSION MODEL
X02. INDIVIDUAL CORE SKILL PROFICIENCY REQUIREMENTS
X03. QUALIFICATIONS AND DESIGNATIONS
X04. PROGRAMS OF INSTRUCTION
X05. ACADEMIC/GROUND TRAINING
X06. SYLLABUS NOTES
X07. CORE SKILL INTRODUCTION PHASE
X08. CORE SKILL BASIC PHASE
X09. CORE SKILL ADVANCED PHASE
X10. CORE PLUS PHASE
X11. INSTRUCTOR TRAINING PHASE
X12. REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS (RQD) PHASE
X13. T&R SYLLABUS MATRIX
X14. SYLLABUS EVALUATION FORMS
X15. SIMULATOR MISSION ESSENTIAL SUBSYSTEMS MATRIX (MESM)

Note: At minimum, each individual T&R chapter shall include above paragraphs in the order listed. It is understood that some communities may need to expound on information, therefore as long as the paragraphs appear in proper sequence, other paragraphs may be inserted. Just ensure all paragraphs are numbered sequentially.

4. Formatting examples for each required paragraph are provided in *italics* throughout this section.

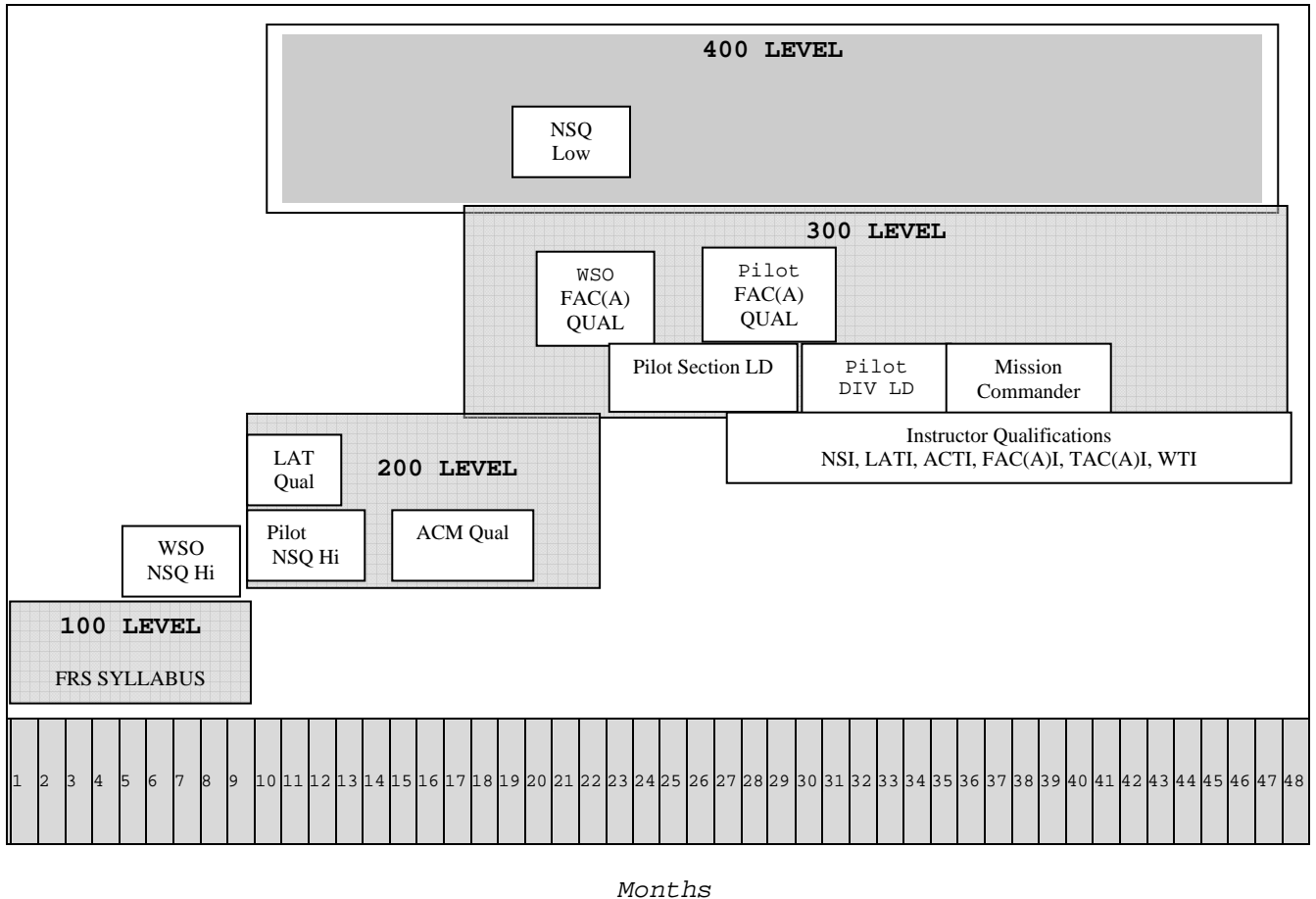
5. The below paragraph shall appear as the first paragraph of each individual MOS/crew position chapters.

X00. [Primary MOS title/number] INDIVIDUAL TRAINING AND READINESS REQUIREMENTS. This T&R Syllabus is based on specific goals and performance standards designed to ensure individual proficiency in Core Skills. The goal of this chapter is to develop individual and unit war fighting capabilities.

6. Training Progression Model. A training progression model graphically depicts community recommended progression for the average crewmember in terms of Core Skill, qualification, and designation attainment. Communities shall develop training progression model for each MOS T&R chapter. There will be significant differences in community training models, as the number of core skills, qualifications, and designations contained within the models are independent of each other. The training progression model shown below serves only as an example. There is no set format for a progression model as long as it accurately depicts the progression each community sets for its personnel over time. The paragraph provided below shall appear prior to each training progression model:

X01. (Community MOS) TRAINING PROGRESSION MODEL. This model represents the recommended training progression for the average (community MOS) in terms of Core Skill, qualification, and designation attainment (see fig.

X-1). Units should use the model as a point of departure to generate individual training plans.



7. Individual Core Skill Proficiency. Proficiency in a Core Skill requires an individual to attain and maintain proficiency per T&R Attain and Maintain tables. Attain and Maintain tables shall be reviewed and updated as appropriate at each T&R conference.

a. CSP Attain Table Events. Events in CSP Attain Tables consist of events required for individuals to initially attain proficiency in each Core Skill. To attain Individual CSP, an individual must simultaneously have a proficient status in all of the events listed in the CSP Attain Table for that Core Skill. All 200-300 level Basic POI events shall be listed in the Attain table under the applicable Core Skill.

b. CSP Maintain Table Events. Events in CSP Maintain Tables consist of events required for experienced individuals to maintain proficiency in each Core Skill. To maintain Individual CSP, an individual must maintain a proficient status in all of the events listed in the CSP Maintain Table for that Core Skill. Communities shall consider the entire T&R to include event complexity, event conditions (day, night, ATC non-radar, severe weather), R-coding, event chaining, event refly, etc. when determining CSP Maintain requirements.

c. Proficiency in Core Plus Skills is not normally required to obtain unit CSP; however, Core Plus Skill proficiency requirements shall be listed in Attain/Maintain Tables to facilitate standardization. All 400 level Basic POI events shall be listed in an Attain Table under the applicable Core Plus Skill. Events in Core Plus Skill Maintain Tables consist of events required for experienced individuals to maintain proficiency in each Core Plus Skill.

d. The following rules apply when updating/developing Attain and Maintain CSP tables.

<ul style="list-style-type: none"> • All Core Skills shall be represented in the Attain and Maintain CSP tables • All 200-300 level events shall be listed in the Attain table under the applicable Core Skill • All events in the Attain table that are not listed in the Maintain table shall be chained by event(s) in the Maintain Table unless the event(s) is not assigned a refly interval (one time training requirement) • The Maintain table shall contain at least one event for each Core Skill • Events in the Maintain table shall be R-coded (Refresher POI) events
<p>During a T&R review, SMEs shall consider the following regarding T&R events in the Attain table that are not chained by event(s) in the Maintain table:</p> <ul style="list-style-type: none"> • Such events must not be assigned a refly factor ('*' listed for refly factor) or • Such events must be moved to the Maintain table or • Such events must be moved out of the Core Skill phases (200-300) to another phase (400+) or • Such events must be deleted from the syllabus

e. Individual CSP format shall be as follows:

X02. INDIVIDUAL CORE SKILL PROFICIENCY (CSP) REQUIREMENTS. A CSP crew consists of individuals representing each crew position who have achieved and currently maintain Individual CSP. In order to be considered proficient in a Core Skill, an individual must attain and maintain proficiency in Core Skill events as delineated in the below paragraphs.

1. Events Required to Attain Individual CSP. To initially attain CSP in a Core Skill, an individual must simultaneously have a proficient status in all 200-300 level T&R events listed for that Core Skill:

Individual CSP Attain Table								
MOS/Billet/Crew Position	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
T&R event requirements to attain CSP	S200 201 202R 203R 204 205R	S210 211 212R	S220 221R 222 320R	230R 231R 232 330R	S240 241R	S250 251R 252 253 254R	S260R 261 262R 263 264 265R	S270R 271 272 273R 274 275R
R = Refresher POI event S = Event conducted in simulator								

2. Events Required to Maintain Individual CSP. To maintain CSP in a Core Skill, an individual must maintain proficiency in all 200-300 level T&R events listed for that Core Skill:

Individual CSP Maintain Table								
MOS/Billet/Crew Position	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
T&R event requirements to maintain CSP	203R 205R 206R 302R	212R	221R 320R	230R 330R 332R	241R	251R 254R 256R	262R 265R 362R 363R	S270R 273R 275R
R = Refresher POI S = Event conducted in simulator								

3. Events Required to Attain Individual Proficiency in Core Plus Skills. Proficiency in Core Plus Skills is not required to obtain unit CSP. Training to Core Plus skills is at the discretion of the unit commanding officer. To initially attain proficiency in a Core Plus Skill, an individual must simultaneously have a proficient status in all T&R events listed for that Core Skill:

Individual Core Plus Skills Maintain Table					
MOS/Billet/Crew Position	CS1	CS2	CS3	CS4	CS5
Core Plus T&R event requirements to maintain CSP	S400 401R 402 403R	410R	420 421R	S430 431R 432R	440R 441 442R
R = Refresher POI event S = Event conducted in simulator					

4. Events Required to Maintain individual proficiency in Core Plus Skills. To maintain proficiency in a Core Plus Skill, an individual must maintain proficiency in all T&R events listed in the table below for that Core Skill:

Individual Core Plus Skills Maintain Table					
MOS/Billet/Crew Position	CS1	CS2	CS3	CS4	CS5
Core Plus T&R event requirements to maintain CSP	401R 403R	410R	421R	431R 432R	440R 442R
R = Refresher POI event S = Event conducted in simulator					

8. Certifications, Qualifications and Designations. All certification, qualification, and designation requirements and specific criteria to achieve them shall be delineated in community T&R manuals. Commanders may issue qualification or designation letters when individual personnel complete training requirements for that qualification or designation. A copy of these letters shall be included in section three of individual performance records per paragraph 203. Only after successfully completing qualification or designation requirements and being issued a qualification/designation letter signed by the commanding officer will an individual be considered qualified or designated. Do not confuse certifications with qualifications or designations as defined below.

a. Certification. A certification refers to the evaluation process conducted during syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency of a crewmember as a prerequisite to qualification or designation. For aviation ground communities, a certification serves to ascertain one-time proficiency evaluation for a given position.

b. Qualification. A qualification is a status ('qualified' or 'not qualified') assigned to personnel based on demonstration of proficiency in a specific skill. Individuals do not lose a qualification as a function of re-fly factor for individual events. However, loss of proficiency (delinquent re-fly factor) for all associated qualification events (events with measurable re-fly factor) constitutes loss of that qualification. Re-qualification requires demonstration of proficiency and shall be achieved by successfully repeating all R-coded events associated with the respective qualification (unless waived per paragraph 202.4).

c. Designation. A designation is a status assigned to an individual based on leadership ability. Designations are command specific and remain in effect until removed for cause or the individual is transferred to another command. T&R syllabi shall refer to the MAWTS-1 course catalog, NATOPS, and other applicable directives for instructor designation criteria.

(1) Designation Criteria. Aviation communities shall delineate community standardized criteria to achieve all designations in individual T&Rs. Designation criteria (to include workup/evaluation events) shall be evaluated (E-coded) events and shall not have CRP value attached. Criteria for Instructor designations shall be delineated in the 500 phase (Instructor Training); criteria for all other designations shall delineated in the 600 level. Community T&Rs may stipulate re-designation criteria; if re-designation criteria are not delineated, re-designation is at the discretion of the commanding officer.

(2) Tactical Flight Leader Designations. Aviation communities shall implement community standardized workup and evaluation events in individual aviation T&R manuals for the following designations: Section Leader; Division Leader; Flight Leader; Mission Commander; and Air Mission Commander.

(3) Instructor Designations. Instructor designations are assigned to personnel based on ability to conduct ground and/or airborne instruction of a Core Skill or mission area. Instructor designations are designed to enhance standardization and safety while training unqualified personnel in specific skills. T&R instructor designation/re-designation requirements should be consistent with, and may reference instructor requirements listed in the MAWTS-1 Course Catalog, NATOPS, and other applicable directives.

d. Certification, Qualification and Designation Tables. All MOS qualifications and designations shall be listed in these tables. These matrices shall consolidate/list criteria and event requirements to achieve each individual qualifications and designations. T&R events required for re-qualification, shall also be delineated in these matrices. Qualification and Designation tables format shall be as follows:

X03. Certification, Qualification and Designation Tables. The tables below delineate T&R events required to be completed to attain proficiency, and initial qualifications and designations. In addition to event requirements, all required stage lectures, briefs, squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in Individual Performance Records (IPR). Loss of proficiency in all qualification events causes the associated qualification to be lost. Regaining a qualification requires completing all R-coded syllabus events associated with that qualification.

INDIVIDUAL CERTIFICATION REQUIREMENTS	
Certification	Event Requirements
List by title each certification	List all requirements to include events and governing directive
This certification table is currently used by aviation ground communities only.	

INDIVIDUAL QUALIFICATION REQUIREMENTS	
Qualification	Event Requirements
NATOPS	IAW OPNAV 3710.7
Instrument	IAW OPNAV 3710.7
QUAL 1	S204R, 205R, 206, 207, 208R
DAY CQ	613R
NIGHT CQ	614R
QUAL 2	S230R, S231, 230, 231, 232, 233R, 234, 235, 236R, S240, S241R, 242, 243R, 244R, 245
QUAL 3	S209, 210, 211R, 212, 213R, 214
QUAL 4	410, 411R, 412R
QUAL 5	380, 381R, 382R, 383, 384, 385R, 386, 387
QUAL 6	390R, 391
R = Refresher POI events required for re-qualification	

INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	Event Requirements
SECT LD	640, 641, 642, 643, 644, 645, 646, 647, 648, 649R. The IUT shall be complete with all 200 and 300 level sorties prior to beginning section lead workup.
DIV LEAD	650, 651, 652, 653, 659R
MSSN CDR	670, 671, 679R
LAT(I)	IAW the MAWTS-1 Course Catalog.
ACT(I)	
NS(I)	
WTI	

9. Programs of Instruction (POI). A POI is a group of events within a syllabus than an individual is required to perform; a POI can be thought of as a subset of a T&R syllabus. There are four POI categories; Basic (B), Series Conversion (SC), Transition (T), and Refresher (R). Individuals are assigned to one POI at any given time. Events within a POI are annotated in both the event description and the T&R Syllabus Matrix with a 'B,' 'SC,' 'T,' or 'R'.

a. Basic (B). The POI prescribed for newly designated personnel.

b. Series Conversion (SC). The POI prescribed for personnel converting from a particular series of aircraft or MACCS system to a new series that has significantly different aircraft or weapons systems characteristics e.g., KC-130FRT to KC-130J.

c. Transition (T). The POI prescribed for personnel changing aircraft/platform type per paragraph 202.

d. 'B', 'SC' and 'T' POIs should include all training required to achieve an MOS if applicable (CNATRA and OPNAVINST 3710.7 training is understood and does not need to be listed). An individual is assigned to the 'B', 'SC' or 'T' POI of a T&R syllabus one time only, at the beginning of the individual's first fleet tour in a particular MOS. These POIs are similar in that they contain events an individual requires to initially attain proficiency in a MOS.

e. Refresher (R)

(1) After completion of a 'B', 'SC' or 'T' POI, the individual is assigned to the Refresher POI of that MOS syllabus, and remains in the Refresher POI throughout the individual's career while assigned to that MOS. The Refresher POI is unique in that it contains events required to regain and maintain proficiency in an MOS.

(2) The Refresher POI is prescribed for personnel returning to an operational force billet who were previously assigned and completed the B/T/SC POI of that MOS syllabus. Refresher syllabi account for previous experience and normally have fewer required 200 through 400 level training events than Basic POIs. Refresher POIs contain appropriate training events that an average experienced individual is required to complete to regain and maintain individual CSP in all T&R Core Skills. The Refresher POI is closely related to the individual CSP Maintain tables in that events in these tables must be in the Refresher POI. However, there may be Refresher events not included in the CSP Maintain table because a community may determine that in addition to events required for maintaining CSP there are events required to regain CSP in a Core Skill.

(a) If an individual loses proficiency in all events in a Core Skill, the individual is required to complete all R-coded events in that Core Skill. For example, a community determines that six events are required to attain proficiency (250-255) and one event is required to maintain proficiency (255) in the Night Systems (NS) Core Skill (see figure 6-X). The community decides that three events are required to regain proficiency (251, 252, and 255) in the NS Core Skill. In this example, if an individual goes delinquent in NS-255, the individual is required to complete NS-251, NS-252, and NS-255 to regain proficiency in the NS Core Skill.

One event required to maintain NS proficiency (NS-255R).

Individual CSP Maintain Table								
Pilot	FAM	AAR	LAT	AS	NS	AA	CAS	AR
T&R event requirements to maintain CSP	S201R 202R	211R	S221R	235R 238R 243R 244R	255R	264R 271R 274R	303R 305R 306R	313R

Three events required to regain NS proficiency (NS-251, NS-252, and NS-255).

STAGE	TRNG CODE	FLT HOURS	FLIGHTS	SIM HOURS	SIMULATOR	REFLY INTVL	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	SORTIE DESCRIPTION	EVENT CONV
CORE SKILL BASIC 200 SERIES																
NS																
SNS	250			1.0	X	*	S		NS	244	B		0.1		SENSORS SIM	311
SNS	251			1.0	X	*	S		NS	250	R		0.1		BCWD PROFILES SIM	230
NS	252	1.3	X			180	A	2	NS	251	B,R		0.6	202	FAM / FORM	232
NS	253	1.3	X			*	A	2	NS	252	B		0.6	202, 236, 237, 241, 252	LGB / GPS	313
NS	254	1.3	X			*	A	2	NS	253	B		0.6	202, 236, 238, 239, 252	20/30 DIVE / TRANSITION	234
NS	255	1.3	X			*	A	2	NS	254	B,R		0.6	202, 236, 237, 238, 239, 242, 252	TGT AREA MECHANICS (VIS/PGM)	235
	5.2	4		2.0	2								2.6			

Figure 6-X.—Refresher POI example.

(b) Pilots and NFOs who have not flown their model aircraft within a prescribed time interval are required to complete 100 level FRS Refresher training per paragraph 405 prior to being assigned to an operational squadron.

f. POI categories exist to standardize differing training requirements based on MOS experience of an average individual in each category. For example, 'individual A' has no previous MOS experience and was recently assigned to a unit; 'individual B' has 10 years of experience in that MOS and has been assigned to the same unit for 2 years. Obviously, individual A has different training requirements than individual B; therefore, individual A is assigned to the Basic POI, and individual B is assigned to the Refresher POI.

g. Series Conversion, Transition, and Refresher POIs normally contain fewer required training events than Basic POI to account for previous experience.

h. Applicable POIs shall be summarized in the following order: Basic, Series Conversion, Transition, and Refresher. For each POI outline, include all required courses and phases of training required to complete the POI. POI format shall include the following columns: (1) Duration of training/length of time for each course or phase noted listed in days, weeks, or months; (2) "Course/Phase" - Title of the course or phase, as applicable; (3) "Activity" - name of activity/command responsible for the training. POI format shall be as follows:

X04. (MOS OR BILLET) PROGRAMS OF INSTRUCTION

1. Basic POI

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-33	Core Skill Introduction Training (CAT I/II)	FRS
34-58	Core Skill Basic Training	Tactical Squadron
59-82	Core Skill Advanced Training	Tactical Squadron
83-88	Core Plus Training	Tactical Squadron

2. Refresher POI

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
XX-XX	Core Skill Basic Training	Tactical Squadron
XX-XX	Core Skill Advanced Training	Tactical Squadron
XX-XX	Core Plus Training	Tactical Squadron

10. Academic/Ground Training. This paragraph contains a listing of all formal and informal academic or ground instruction that meets requirements for syllabus completion. In addition, recommended academic/ground instruction that complement MOS progression may be listed.

a. Where applicable, include the following statement: "Utilize academic courseware as outlined in the MAWTS-1 Course Catalog."

b. For aviation ground communities, list all skills enhancement formal courses that fulfill training requirements.

c. Academic/ground training format shall be as follows:

X05. ACADEMIC/GROUND TRAINING

1. Academic training shall be conducted for each phase/stage of the syllabus. Where indicated, standardized academic training materials exist and may be obtained from the sponsoring activity.

2. External academic courses of instruction available to complete the syllabus are listed below:

<u>COURSE</u>	<u>ACTIVITY</u>
Marine Air Traffic Control Officer Course	NATTC, FL
Weapons and Tactics Instructor Course	MAWTS-1
Marine ATC Mobile Team Leaders Course	MAWTS-1
Joint Air and Space Operation Center (AOC) Initial Qualification Training (IQT); Airspace Course	Hurlburt Field, FL
Multi-TDL Advanced Joint Interoperability Course	Fort McPherson, GA

11. Syllabus Notes. This paragraph should include all notes, policies, and guidelines applicable to the syllabus. Essential information pertaining to the entire syllabus should be explained in detail in this paragraph.

X06. T&R SYLLABUS NOTES. List notes, policies, and guidelines applicable to the T&R syllabus if required.

12. T&R Syllabus Format. Aviation T&R manuals contain syllabi that apply to a specified aviation community. A T&R syllabus refers to all events that apply to a specified aviation MOS/crew position.

a. Example: An aircrew syllabus exists for each crew position within each aircraft. For the F/A-18D, there are two syllabi defined - the pilot and the WSO. Because T&R manuals are generally separated by aircraft model, all syllabi that apply to the F/A-18 model aircraft (F/A-18A Pilot, F/A-18C Pilot, F/A-18D Pilot and F/A-18D WSO) will be contained in the F/A-18 T&R Manual.

b. Syllabus structure. T&R syllabi are constructed using a tiered progression of increasingly challenging training events. T&R syllabi are divided into phases, which are subdivided into stages and events as described below:

PHASES are subdivided into STAGES

STAGES contain grouped "like" events

Phase - A group of stages/events delineating one of the T&R syllabus levels (100, 200, 300, 400, 500 etc.)

Stage - A group of similar T&R events (like Core Skill events) in numerical sequence within a Phase (RDR, TWR, MMT, etc.).

Event - A training evolution required within a syllabus.

c. Community SMEs shall update/construct T&R syllabi per the following guidelines:

(1) Event. The basic building block of training in Marine Aviation is an event. Events delineate specific tasks that must be successfully performed (what the individual must accomplish), and measurable levels of performance for each task (how well each task must be performed). Each event has a unique three-digit numeric training code (e.g. 214) assigned to it. Events are displayed along with the Core Skill name acronym (e.g. TERF-214). Several terms are often used interchangeably to refer to an event (e.g. 'Event,' 'Training Event,' 'T&R Code,' 'Training Code,' etc.).

(2) Stage. A stage is a group of one or more events within a phase. Each stage is categorized and named by Core Skill (e.g. Terrain Flight or TERF). Aviation flight communities should follow stage titles standardized terminology established in Appendix C. A stage may not contain events from more than one phase, although the same stage/Core Skill name may be used in more than one phase (e.g. a 200-level "TERF" stage and a 300-level "TERF" stage).

(3) Phase. A phase is a standardized group of events that share the same first digit and are organized as described below:

(4) Core Phases

(a) Core Skill Introduction Phase (100 level). This training includes fundamental system/equipment operation familiarization, initial crew procedures, and initial exposure to Core Skills. Core Skill Introduction training may also include aircrew Refresher, Series Conversion, and Transition training. Aviation Ground personnel receive all 100-level training at their respective entry-level MOS schools. At the completion of this phase, individuals are normally assigned to operational units.

(1) CNATRA, FRSSs, and/or operational units conduct aircrew Core Skill Introduction training. Entry-level MOS schools and/or the crewmember's first

operational unit conduct aviation ground unit and MACCS personnel training. Community SMEs will recommend Combat Readiness Percentage (CRP) weighting for each event. Pilot/NFO CNATRA training will normally equate to 25 percent CRP. Upon completion of the Core Skill Introduction Phase an individual shall be at 60 percent CRP (Core Skill Introduction Phase = 60 percent CRP).

(2) For OSA aircrew, upon completion of an approved military or contractor ground school and simulators an individual will be at 60 percent CRP.

(b) Core Skill Basic Phase (200 level). This level includes Core Skill training essential to wartime employment of the unit platform/system. Training at this level enhances proficiency from fundamental understanding of Core Skills to proficiency in basic required Core Skills. Individuals should normally complete this phase of training within the first year of assignment to a fleet aviation unit. Aviation flight units will normally train aircrews through this phase prior to overseas assignment.

(1) Assignment of CRP values should fall within the range of 0.30 - 1.00 per event. CRP weighting shall reflect the hierarchical nature of core competencies. Upon completion of the Core Skill Basic Phase, an individual shall be at 75 percent CRP (Core Skill Basic phase = 15 percent CRP).

(2) For OSA aircrew, upon completion, an individual will be a T2P or equivalent and at 75 percent CRP. (Note: An individual will be at 65 percent CRP if, while progressing through this phase, is designated a T3P or equivalent.)

(c) Core Skill Advanced Phase (300 level). This level contains advanced Core Skill training. It increases proficiency in basic Core Skills and develops mission-level leadership that leads to combat qualifications and leadership designations.

(1) Crews proficient in this phase of training should be capable of planning/leading/directing flights of numerous aircraft in a contingency operation or crews within command and control or aviation ground support agencies. Assignment of CRP values should fall within the range of 0.50 - 1.00 per event. CRP weighting shall reflect the hierarchical nature of core competencies. Upon completion of the Core Skill Advanced Phase, an individual shall be at 95 percent CRP (Core Skill Advanced phase = 20 percent CRP).

(2) For OSA aircrew, upon completion, an individual will be a TAC/TPC or equivalent and at 95 percent CRP.

(d) Core Plus Phase (400 level). This level contains skill training associated with low probability of execution and/or theater specific operations. Although Core Plus training events may provide valuable training opportunities, they are not considered essential to achieve unit Core Competency.

(1) Core Plus training is conducted at the discretion of operational commanders and allows unit training flexibility. Upon completion of the Core Plus Phase, an individual shall be at 100 percent CRP (Core Plus Phase = 5 percent CRP).

(2) For OSA aircrew, upon completion, an individual will be a NE/NI/ANI or equivalent and at 100 percent CRP.

(e) Core Competency for operational units resides in the 200-300 training levels (considered 'Core' at the operational echelon). Mastery of 200-300

level Core Skills results in highly trained personnel who contribute to the unit's overall warfighting capability and enables a combat unit to accomplish its assigned mission. Therefore, fleet units shall emphasize individual proficiency in 200-300 level Core Skills. In some instances, certain Core Plus skills may be deemed essential depending on mission requirements and therefore may be considered Core Skills for pre-deployment readiness determination. Only the MAW or MAGTF commander may "re-designate" a Core Plus Skill to the Core Skill level for readiness reporting purposes. M-SHARP shall afford an automated means to affect this adjustment within the training management system.

(5) Additional Phases. These phases are reserved for Instructor syllabi, Requirements and Qualification and Designation syllabi, and academic event tracking. Events in these phases shall not have CRP credit assigned.

(a) Instructor Training Phase (500 level). This phase contains instructor workup and evaluation certification syllabus events. This level will also contain instructor workup and certification syllabus events as applicable for Contract Instructors (CI) who instruct simulator events.

(b) Requirements, Qualifications, Designations (RQD) Phase (600 level). This phase contains all other syllabus events and special interest tracking codes that do not neatly 'fit' into the above phases and is designed to facilitate training management. The 600 phase contains standardized combat flight leadership workup and evaluation events. This phase often contains event requirements not mandated by the T&R program such as NATOPS, instrument evaluations, and the functional check pilot syllabus.

(1) RQD codes are not events but codes used to facilitate community training management that may be used in the 600 level if M-SHARP does not otherwise handle the specific instance that the community wishes to track. For example, RQD codes may be established to monitor execution of specific instances of strategic air refueling (if no Strategic Air Refueling T&R event exists), arctic weather events, specific exercise sorties, etc.

(2) M-SHARP functionality eliminates the need for tracking codes related to the possession of qualifications, designations, certifications (Appendix C); flight cancellation codes (no takeoff) or airborne abort cancellation codes (T&R code specific); and ordnance expenditure. All of these can be logged and reported within M-SHARP and therefore shall not be authorized.

d. T&R Syllabus Format

(1) The phases shall be delineated in the following sequence:

X07 CORE SKILL INTRODUCTION PHASE
X08 CORE SKILL BASIC PHASE
X09 CORE SKILL ADVANCED PHASE
X10 CORE PLUS PHASE
X11 INSTRUCTOR TRAINING
X12 SPECIAL INTEREST TRACKING

(2) Phase/Stage Format. Phases and subsequent stages shall be formatted and numbered as follows:

X07,X08,X09,X10,X11,X12. (NAME OF PHASE)

1. General. Required. List policies, notes, and guidelines applicable to all phase events. List applicable phase prerequisites.

a. Stages. Required for 100-400 level phases. Lists stages in the order they occur in the phase.

2. Stage Title. Stage abbreviations shall be used and shall follow standard abbreviations per Appendices A and B or the Core Skill Abbreviations table, as applicable.

a. Purpose. Required. Describe the stage function/purpose.

b. General. As applicable. List policies, notes, and guidelines applicable to all stage events. List applicable stage prerequisites. Denote the level of performance desired by the end of the stage if the specific flights/events do not describe the required level of performance.

c. Crew Requirements. As applicable. State which crewmembers are required. Specific crew requirements may be identified in individual events if appropriate.

d. Academic/Ground Training. As applicable. List ground instruction required in this stage. For tactical flight communities, where applicable, include the following statement: "Utilize academic courseware as outlined in the appropriate Type/Model/Series chapter of the MAWTS-1 Course Catalog."

e. Total Training Events. Required. Note the total number of events for each stage as follows:

(1) *Live and Simulated Total Training Events*: - XX. (Aviation Ground Communities)

or

(1) *Flight and Simulator Event Training* - XX events, X.X hours. (Tactical Flight communities)

(List all stage events per the below format)

(3) Event Format. Following the subparagraphs for each stage, list all events within the stage in numerical order per the below format. The notes below describe how entries are to be developed:

1/	2/	3/	4/	5/	6/	7/	8/	/9
<u>FAM-300</u>	<u>2.0</u>	<u>180</u>	<u>B,SC,R</u>	<u>E</u>	<u>1</u>	<u>KC-130</u>	<u>A</u>	<u>(N)</u>

10/ Goal. Required entry.

11/ Requirement. Required entry.

12/ Performance Standard. Required entry.

13/ Prerequisite. As applicable entry.

14/ Ordinance. As applicable entry.

15/ Range Requirement: As applicable entry.

16/ External Syllabus Support. As applicable entry.

17/ References: Optional entry.

NOTES:

- 1/ Stage abbreviation-Training Code
- 2/ Projected Event Duration
- 3/ Refly Factor
- 4/ Programs of Instruction
- 5/ Evaluation
- 6/ Device Number
- 7/ Device Type
- 8/ Device Options
- 9/ Event conditions
- 10/ Goal
- 11/ Requirement
- 12/ Performance standard
- 13/ Prerequisite
- 14/ Ordnance Requirement
- 15/ Range/Target Requirement
- 16/ External Syllabus Support
- 17/ References

Note: Event information shall be consistent with and summarized in the T&R Syllabus Matrix (paragraph 13 below).

1/ Stage-Training Code. Stage abbreviations shall be used and shall follow standard abbreviations per Appendices A and B or the Core Skill Abbreviations table, as applicable. An 'S' before the Stage abbreviation may be used to denote a simulated event. A unique numeric three-digit training code shall be assigned to each syllabus event. The first digit of the event training code shall begin with the appropriate phase series number (Core Skill Introduction events = 1XX; Core Skill Basic events = 2XX; etc.). The 2nd digit of a T&R code is normally the same for all events within a stage. Example: a hypothetical "TERF" stage may consist of the following events: 210, 211, 212, 213, and 214. The 220 event would indicate the start of the next stage. Phases are numbered as follows:

Core Skill Introduction	100-199
Core Skill Basic	200-299
Core Skill Advanced	300-399
Core Plus	400-499
Instructor Training	500-599
Requirements, Qualifications, Designations (RQD)	600-699

2/ Projected Event Duration. Projected event duration should reflect the average time to execute the event requirement (actual time to execute the event may vary). Transit time may be added to the event duration. Projected event durations should be listed in applicable columns in the matrix (flight, live, simulator, etc.) and be stated in hours. Projected event duration is furnished as a planning tool only (does not reflect flight hour requirements).

3/ Refly Factor. Refly (proficiency interval) factors reflect the maximum time between syllabus events where the unit can expect the average crewmember to maintain an acceptable level of proficiency. Refly factors shall be delineated in days for flight units; aviation ground units normally use months. An asterisk (*) indicates the event has no refly interval, indicating a one time training requirement (unless R-coded).

4/ Programs of Instruction (POI). List the applicable POI(s) using the abbreviations below:

B = Basic
SC = Series Conversion
T = Transition
R = Refresher

For Core Skill Introduction Refresher events (Pilot/NFO, 100 level only):

R = Full refresher program
MR = Modified Refresher
SS = Safe For Solo

5/ Evaluation. An "E" shall be annotated here if the event is required to be evaluated per paragraph 202.5.

6/ Device Number. List the number of aircraft, system, simulator, or other device(s) required for the completion of the event.

7/ Device Type. List the type of device required for the completion of the event. For simulator events, list the specific type(s) of trainers (include Command Post, Tactical Environment Network etc.) that may be used.

8/ Device Options. If more than one type of device may be used for the event, state which device is preferred and which device may be used as an option, such as "A/S - Aircraft preferred, Simulator optional."

Code	Requirement
A	Event performed in aircraft.
L	Event shall be conducted live (conducted in the field/garrison, during an exercise, etc). Requires live (non-simulated) execution of the event.
S	Event performed in simulator or a simulated practical application.
A/S	Event performed in aircraft preferred/simulator optional.
S/A	Event performed in simulator preferred/aircraft optional.
L/S	Event performed live preferred/simulator optional.
S/L	Event performed in simulator preferred/live optional.
TEN	Tactical Environment Network.
TEN +	Tactical Environment Network and at least one networked, man-in-the-loop simulator.
CP	Command Post.

9/ Event Conditions. Indicate the environmental (Day or Night) or Night Systems conditions required. Options include:

Code	Requirement
D	Shall be flown or conducted during day.
N	Shall be flown or conducted at night (using available night vision devices or flown unaided).
(N)	May be flown or conducted day or night; if at night, available night vision devices may be used or flown unaided.
NS	Shall be flown or conducted at night using available night vision devices.
(NS)	May be flown or conducted day or night; if at night, available night vision devices shall be used.
N*	Event Shall be flown or conducted at night unaided.
(N*)	Event may be flown or conducted at night; if at night, shall be flown unaided.

10/ Goal. State the terminal learning objective.

11/ Requirement. List specific tasks for the event; indicate what the individual must accomplish.

12/ Performance Standard. Describe measurable level of proficiency for that event.

13/ Prerequisite. A prerequisite is a requirement that must be successfully completed prior to commencing another (generally more complex) training requirement. Prerequisites are training requirements used to implement a building block approach to training. Omitting or skipping event prerequisites is prohibited (unless the prerequisite is waived).

The most common type of prerequisite is the requirement to complete a specific event before beginning the execution of another event. However, a prerequisite may also direct the completion of an entire stage, a specific academic requirement, or even the maintenance of a specific qualification or designation prior to commencing an event. Just as an event may have prerequisites, academic classes or lectures, events, stages, phases, qualifications, and designations all may have prerequisites. For example, it is possible to assign an event as a prerequisite for commencing a stage, just as it would be possible to require stage completion as a prerequisite for an event. Aviation units may use any combination or number of these prerequisites to tailor training as appropriate. Prerequisites can be separated into several different types including academic, event, stage, phase, qualification, and designation.

Academic Prerequisites. "Knowledge-based" information (often a class or lecture) that must be imparted to, or gained by the student prior to commencing another training requirement in an academic prerequisite. For example, the LAT lecture series may be a prerequisite to commencing the LAT stage.

Event Prerequisites. A T&R event that must be completed prior to commencing another training requirement is an event prerequisite. In addition, event prerequisites may further be refined depending on conditions as follows.

Night optional prerequisite conditions may exist for night optional T&R events and are annotated with parentheses around the event [e.g. (200)] or with "DAY" after them (e.g. 200 DAY). A prerequisite annotated with parentheses must be previously completed only if the scheduled night optional T&R event is actually conducted at night. A prerequisite annotated with "DAY" must be previously completed only if the scheduled night optional T&R event is actually conducted during the day. As an example, if 230 is a night-optional event and its prerequisites are listed as "220, (221), 222 DAY," the following applies:

- If event 230 is conducted during the day, prerequisites that apply are 220 and 222 only.
- If event 230 is conducted during night, prerequisites that apply are 220 and 221 only.

Light level prerequisite conditions may exist for T&R events that can be conducted at night and are annotated with parentheses and "HLL" or "LLL" around the event [e.g. (200 HLL)]. Prerequisite codes annotated with parentheses and "HLL" after them must be previously completed if the T&R event is flown using night systems during high light level conditions. Prerequisite codes annotated with parentheses and "LLL" after them [e.g. (200 LLL)] must be previously completed if the T&R event is flown using night systems during low light level conditions. As an example, if 240 is a night-optional event and its prerequisites are listed as "230, (231 HLL), (232 LLL)," the following applies:

- If event 240 is flown during HLL conditions, prerequisites that apply are 230 and 231 only.
- If event 240 is flown during LLL conditions, prerequisites that apply are 230 and 232 only.

Stage Prerequisite. A T&R stage that must be completed prior to commencing another training requirement is a stage prerequisite. For example, a community may require a specific stage to be completed as a prerequisite for an event.

Phase Prerequisite. A T&R phase that must be completed prior to commencing another training requirement is a phase prerequisite. For example, completion of the 100 phase is normally a prerequisite to commencing the 200 phase training.

Qualification Prerequisite. A qualification that must be completed prior to commencing another training requirement is a qualification prerequisite. For example the NSQ HLL qualification is normally a prerequisite to commencing NSQ LLL qualification training.

Designation Prerequisite. A designation that must be completed prior to commencing another training requirement is a designation prerequisite. For example, the Section Leader designation is normally a prerequisite to commencing Division Leader designation training.

For events with device options, prerequisites may be specified by device type. For example, if a T&R code 223 can be conducted in a simulator or in an aircraft, 223 may have no prerequisite if conducted in the simulator, but if conducted in the aircraft prerequisites may apply.

14/ Ordnance Requirements. Ordnance shall be specified in a table format to identify primary ordnance requirements and quantity with allowable substitutes if applicable. A partial list of ordnance types may be viewed at the CG TECOM ATB website at www.tecom.usmc.mil/atb/

* There may be instances where a specific quantity and type of ordnance is required by POI, i.e. Basic or Refresher. In those instances the POI shall be identified in a separate column prior to the ordnance column.

ORDNANCE				
POI*	ORDNANCE	QUANTITY	ALLOWABLE SUBSTITUTES	NOTES
<i>Basic*</i>	<i>GBU-31</i>	<i>1</i>	<i>GBU-38/32</i>	
<i>Refresher*</i>	<i>GBU-16</i>	<i>2</i>	<i>GBU-10/12</i>	
	<i>RR-129</i>	<i>60</i>	<i>RR-144</i>	
	<i>SM-875 STUF</i>	<i>60</i>	<i>MK-32</i>	

15/ Range/Target Requirements. List all range/target capabilities required to complete the event, if applicable. Range/target capability acronyms, derived from a standard list, shall be used. The standard list of range/target capabilities (currently under development) may be viewed at the CG TECOM ATB website at www.tecom.usmc.mil/atb/

Format example:

<i>Range Requirements</i>		
<i>Required Capabilities</i>	<i>Allowable substitutes</i>	<i>Desired Capabilities</i>
<i>RSTD</i>		<i>SST, EW, TGTDISP, EXP</i>
<i>TGT</i>	<i>NBDS</i>	
<i>URBN WPNS</i>		
<i>JCAS</i>		
<i>JDAM</i>		

<i>Target Requirements</i>		
<i>Required Capabilities</i>	<i>Allowable substitutes</i>	<i>Desired Capabilities</i>

16/ External Syllabus Support. List additional training resource requirements and/or external support required to complete the event, (e.g., adversary support, tanker support, etc) if applicable. For example, *CAS - FAC(A) with X number of mortar/artillery/rockets for marking; dissimilar FW adversary F-18/F-5 etc.* List other critical training resources required to achieve T&R requirements.

17/ References. If preferred, state any references that are required or support accomplishment of the event.

13. T&R Syllabus Matrix. T&R syllabus event information shall be transposed in the matrix shown below. T&R Syllabus Matrix information shall be consistent with

event information per paragraph 12 above.
Format example:

X13. T&R SYLLABUS MATRIX. The below matrix summarizes T&R syllabus event information.

CH-53 PILOT (MOS 7566)															
200 SERIES CORE SKILL BASIC															
The numbers correspond with event information noted in the Event Format section [par. 603.12.d.(3) above]															
The letters (A, B, C, D) are additional event information noted below.															
1	1	2	3	4	5	6	7	8	9	13	A	B	C	D	
STAGE	TRNG CODE	FLT/LIVE HOURS	SIM HOURS	REFLY INTVL	POI	EVAL	DEVICE		CONDITIONS	PREREQ	EVENT DESC	CRP	CHAINING	EVENT CONV	
							TOTAL #	TYPE							OPTIONS
FAM/INST															
FAM	200		1.5	*	B,R,SC			S	S	(N)		SIM FLIR	0.2		200
FAM	201	1.5		365	B,R		I	A	A	(N)	200	A/C FAM	0.2		201
FAM	202		1.5	*	B			S	S/A	NS		NS FAM	0.2		200
		1.5	3.0									0.6			
FORM															
FORM	210	1.0		365	B,R,SC		2	A				2 A/C DAY FORM	0.5		210
FORM	211	1.0		180	B,R		2	A		NS	210,222	2 A/C HLL FORM	0.8	210	211
		2.0	0.0										1.3		
CAL															
CAL	220	1.5		365	B		I	A			201	1 A/C DAY CAL	0.5		220
CAL	221	1.5		365	B,R,SC		2	A			210,220	2 A/C DAY CAL	0.5	210,220	221
CAL	222	1.5		180	B		I	A		NS	202,220	1 A/C HLL CAL	1.0	220	222
CAL	223	1.5		180	B,R,SC		2	A		NS	211,221,222	2 A/C HLL CAL	1.0	210,211,220,221,222	223
CAL	224	1.5		*	B,R,SC		I	A		NS	222	HLL HUD	0.0		224
		7.5	0.0									3.0			
TERF															
TERF	230	1.5		365	B		I	A			201	1 A/C DAY TERF	0.5		230
TERF	231	1.5		365	B,R,SC		2	A			210,230	2 A/C DAY TERF	1.0	210,230	231
TERF	232	1.5		180	B,R,SC		I	A		NS	202,230	1 A/C HLL TERF	1.0	230	232
TERF	233	1.5		180	B,R,SC	E	2	A		NS	211,231,232	2 A/C HLL TERF	1.0	210,211,230, 231,232	233
		6.0	0.0									3.5			
(continue listing all 200 phase events here)															
PHASE TOTALS															
Flt/ Live Hrs	27.0	3.0	Sim Hrs									15.0	CRP		
Matrices shall list all T&R events.															

Figure 6-X.--Sample T&R Syllabus Matrix.

a. The numbered items in the matrix correspond with numbered event information noted in the Event Format section. Refer to para. 603.12.d.(3) for additional information on these event items.

b. The lettered items (A, B,C,D) in the matrix contain additional information not previously noted in the syllabus. See table below for description of items:

Letter	Item Name	Item Description
A	Event Desc	This item is optional. List a brief description of the event; acronyms should be used when appropriate.
B	CRP	<p>Denote the event CRP value.</p> <p>CRP is a measurement of individual readiness. CRP weighting should reflect the hierarchical nature of core competencies. CRP values shall only be applied to 100-400 phase events. Each 100-400 level event in a syllabus may (or may not) be assigned a CRP value. Assignment of CRP values should fall within the range of 0.30 - 1.00 per event and should not be less than 0.25 per event. Events with no refly factor should have no or minimal CRP value.</p> <p>100-400 stages shall be assigned a set CRP subtotal as delineated below; total CRP value of all syllabus events shall equal 100%. For Pilots/NFOs, CNATRA training will normally equate to 25 percent CRP and FRS Core Skill Introduction training to 35 percent Combat Readiness Percentage.</p> <ul style="list-style-type: none"> - Core Skill Introduction phase = 60 percent CRP - Core Skill Basic phase = 15 percent CRP - Core Skill Advanced phase = 20 percent CRP - Core Plus phase = 5 percent CRP
C	Chaining	<p>List the T&R codes which the event chain updates (chained codes).</p> <p>Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events. When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. The T&R code that is logged is known as the "chaining code," and the updated codes are "chained codes." Chained codes are not always updated when a chaining code is logged. Specific rules determine which events may be updated (see Chapter 2, event proficiency updating).</p> <p>Only events in a sequence entailing demonstration of <u>equivalent skills</u> shall be chained. Delineation of chaining should be an objective process. Only events with similar skill set requirements should be chained.</p> <p>All aspects of an event should be considered when determining chaining. Event conditions, type and number of devices, requirements, performance standards, ordnance requirements, etc., must all be considered when determining equivalent skills and subsequent chaining.</p>

		<p>For example: CAS-230 is a day event requiring four CAS runs to be completed in a low threat environment. CAS 231 is a day event requiring four CAS runs to be completed in a high threat environment. CAS 232 is a day event requiring PGM employment CAS 233 is a NS event requiring four CAS runs to be completed in a low threat environment.</p> <p>SMEs may determine 231 may chain update 230 as the skill set required in 231 is equivalent (or more complex) to the skill set required in 230. Likewise SMEs may determine 233 may chain update 230. On the other hand, 233 may or may not chain 231 and 232 depending on the SME assessment of skill set requirements. SMEs may determine 233 should not chain update 231 and 232 as different skill sets are required to maintain proficiency in 231 (high threat environment), 232 (PGM CAS employment), and 233 (NS CAS).</p> <p>Communities should be careful not to 'over' or 'under' chain T&R events. A single event should not chain a large number of syllabus events unless such a chaining event specifies equivalent skill requirements in all of the chained events.</p> <p>Chaining events where equivalent skill training requirements MAY occur is an example of 'over chaining.' For instance, during the conduct of a tactics (TAC) event, training in externals (EXT) may or may not be performed. Unless the TAC event specifies EXT training in the requirements section, the TAC event should not chain other EXT events.</p> <p>Conversely, not chaining events where equivalent skill training requirements occur is an example of 'under chaining.' For instance, a night CAS event should chain a day CAS event if the night CAS event requirements are similar (or more complex) than the day CAS event requirements. Unless the day CAS event specifies unique skill training in the requirements section (the day CAS event has different skill set requirement not contained in the night CAS event), the night CAS event should chain the day CAS event.</p> <p><u>Conditional Chaining.</u> The following environmental conditions further specify which T&R codes are chain-updated. These conditions shall be annotated per the below in T&R chaining matrices when appropriate.</p> <p><u>Night Optional.</u> Chained codes annotated with parentheses around them, e.g. (200), are only chain-updated if the chaining code is conducted at night.</p>
--	--	---

		<p><u>Night Systems Optional.</u> Chained codes annotated with parentheses and "NS" after them, e.g. (200 NS), are only chain-updated if the chaining code is conducted using night systems.</p> <p><u>Light Level Optional.</u> Chained codes annotated with parentheses and "HLL" after them, e.g. (200 HLL), are only chain-updated if the chaining code is conducted using night systems during a high light level period. Chained codes annotated with parentheses and "LLL" after them, e.g. (200 LLL), are only chain-updated if the chaining code is conducted using night systems during a low light level period.</p> <p><u>Example 1:</u></p> <table><tr><td><u>Event</u></td><td><u>Events Updated</u></td></tr><tr><td>TERF 220</td><td></td></tr><tr><td>TERF 221</td><td>220</td></tr><tr><td>TERF 222</td><td>220, 221</td></tr></table> <p>This is a simple case where chaining updates events TERF-220, TERF-221 when TERF-222 is completed (assuming 221 and 220 indicate 'Proficient'). Event 220, 221 and 222 are daylight TERF events. The skills required in 221 and 222 are equivalent skills to lower sequence events and completion of 221 and 222 updates lower sequence event proficiency.</p> <p><u>Example 2:</u></p> <table><tr><td><u>Event</u></td><td><u>Events Updated</u></td></tr><tr><td>CAL 220</td><td></td></tr><tr><td>CAL 221</td><td>220</td></tr><tr><td>CAL 222</td><td>220, (221 NS)</td></tr><tr><td>CAL 223</td><td>220, (221 NS), (222 LLL)</td></tr></table> <p>This is a different case where chaining codes may not update all chained codes; 220 is a daylight CAL event; 221 is an NS CAL event and 222/223 are (NS) CAL events. If CAL-223 is completed, it always updates 220. However, 221 will only be updated when 223 is flown using night systems (NS specific skills), and 222 will only be updated when 223 is conducted in LLL conditions (light level specific).</p>	<u>Event</u>	<u>Events Updated</u>	TERF 220		TERF 221	220	TERF 222	220, 221	<u>Event</u>	<u>Events Updated</u>	CAL 220		CAL 221	220	CAL 222	220, (221 NS)	CAL 223	220, (221 NS), (222 LLL)
<u>Event</u>	<u>Events Updated</u>																			
TERF 220																				
TERF 221	220																			
TERF 222	220, 221																			
<u>Event</u>	<u>Events Updated</u>																			
CAL 220																				
CAL 221	220																			
CAL 222	220, (221 NS)																			
CAL 223	220, (221 NS), (222 LLL)																			
D	Event Conv	<p>List the equivalent event code(s) from the previous T&R syllabus (if applicable).</p> <p>Event conversion refers to the syllabus event proficiency update process via T&R conferences or correspondence change initiatives. Syllabus event conversion is used to convert individual event proficiency status of the previous T&R syllabus into event proficiency status of the current T&R.</p>																		

		<p>Similar to chaining, delineation of event conversion codes should be an objective process. Only events with similar requirements and performance standards should be converted.</p> <p>For example, the previous T&R syllabus specified that CAS-230 is a day event requiring four CAS runs to be completed IAW the community TTP and TAC SOP. The new T&R specifies that CAS 232 is a day event requiring four CAS runs to be completed IAW the community TTP and TAC SOP. 230 may be listed as an event conversion code for CAS 232. The new syllabus specifies that CAS 234 is a NS CAS event. CAS 230 should not be listed as an event conversion code for CAS 234 as different skill sets are required to maintain proficiency in 234 (Night Systems) than in 230 (day CAS).</p>
--	--	--

14. T&R Syllabus Evaluation Forms. Communities shall develop community standardized evaluation forms for all events contained in their T&R syllabus. T&R syllabus evaluation forms shall be placed in T&R manuals as an appendix or maintained by the syllabus sponsor. If the syllabus sponsor maintains T&R syllabus evaluation forms, the syllabus sponsor shall ensure electronic copies are made available to fleet units.

Syllabus evaluation format shall be as follows:

X14. SYLLABUS EVALUATION FORMS. See appendix X for syllabus evaluation forms.

or,

X14. SYLLABUS EVALUATION FORMS. Contact (syllabus sponsor) to receive (Crew position/MOS) T&R syllabus evaluation forms.

15. Simulator Mission Essential Subsystems Matrix (MESM)

a. Tactical flight and MACCS communities (see Para 104) shall develop simulator-specific Mission Essential Subsystem Matrix(ces) (MESM) for each MOS syllabus that contains simulated events. Subparagraphs shall be added to clarify applicable MESM policy per paragraph 201.5. MESM format example as follows:

X15. SIMULATOR MISSION ESSENTIAL SUBSYSTEMS MATRIX (MESM)

1. Events designated by an "S" in the event header shall be flown/conducted in a training device equipped to meet the objectives listed in the event description; each event requires specific simulator capabilities. For each individual event, a simulator is categorized as Full Mission Capable (FMC), Partial Mission Capable (PMC), or Non-Mission Capable (NMC) based on the status of mission essential simulator subsystems. The following definitions apply:

a. FMC. All simulator subsystems required to meet the training objectives for the event to be flown/conducted are installed and operating properly.

b. PMC. A simulator subsystem or capability considered highly desirable, but not essential, to meet the training objectives is not installed or is not operating properly. While the event can still be completed, the quality of training is degraded.

c. NMC. The device lacks the capability to complete the event due to a critical subsystem or capability being inoperative or not installed. A simulator will be considered NMC if its configuration is greater than 3 months out of date as compared with the current aircraft/system configuration.

2. Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Commanding Officers shall be notified of all scheduled events in NMC simulators. Each commanding officer should notify DC/Aviation APW-71/APC [Info appropriate MCI/MARCORBASE, CG TECOM ATB and PMA-205(MARFED)] by DMS message (via the applicable chain of command) when NMC simulators due to aircraft configuration changes occur for greater than six months or when in the commanding officer's judgment the NMC rate has had an adverse effect on the squadron's ability to train.

3. Simulator MESM Application. The matrix below illustrates how the absence of a particular simulator subsystem or capability affects simulator MC status for each training event in this Manual. All simulator events will be completed in a FMC or PMC simulator as determined by the MESM. Completion of an event in a PMC simulator shall be noted on the ATF with a description of the impact to training. Under no circumstances will an event be completed in a device determined to be NMC for that event without the approval of the commanding officer.

4. Simulator event briefs shall be identical, both procedurally and in content, to aircraft/system event briefs. The length of the brief should be based upon the mission to be flown/conducted and content to be covered, and should not be forced to fit into the standard simulator briefing period.

5. If the simulator is not available, simulator periods may be flown in the aircraft or conducted on the system.

6. Scheduling. The time between a simulator event and the corresponding aircraft/system event should be minimized to the maximum extent possible.

AH-1 SIMULATOR MISSION ESSENTIAL SUBSYSTEM MATRIX (MESM)		
<i>(List simulator model)</i>		
Failed Sub-System	NMC for:	PMC for:
<i>Front Seat Motion</i>	<i>Any event except SFAM 100, 110, SSWD 160, 165, SSWD 240, SOAS 260</i>	<i>SFAM 100, 110 SSWD 160, 165 SSWD 240, SOAS 260 SFCLP 430</i>
<i>Rear Seat Motion</i>	<i>Any event except SFAM 100, SSWD 160, 165, SINST 125 SSWD 240, SOAS 260</i>	<i>SFCLP 430</i>
<i>Aural</i>	<i>SFAM 100, 101, 104, 111, 114, CCX 180, SFCLP 200, SEW 300, SANSQ 310, SBIP 500, 503, DESG 600, 602,603</i>	<i>Any event</i>
<i>Visual F/S</i>	<i>All F/S & OS events</i>	
<i>Visual R/S</i>	<i>All R/S & OS events except SINST</i>	<i>SINST 120, 121, 122, 125 SBIP 503</i>
<i>NVG Visual</i>	<i>SFAM 114, SFCLP 200, 430 SANSQ 310, 313</i>	<i>SSWD 240, 243, SEW 300</i>
<i>ANVIS HUD</i>		<i>SFAM 114, SFCLP 200</i>
<i>Basic Moving Models</i>	<i>SFAM 110, SINST 125 SFCLP 430 -- L Class Amphib</i>	<i>SSWD 160, 162, 165, 240, 243 SOAS 260, SEW 300, SANSQ 313, SOAS 404, SWTO 520, 521</i>
<i>FLIR/MFD¹ (front)</i>	<i>SFAM 110</i>	<i>SSWD 160, 165, 240, 243 SOAS 260, SEW 300, SANSQ 313, SOAS 404, SWTO 520, 521</i>
<i>FLIR/MFD repeater at IOS</i>	<i>SSWD 160, 165, 240, 243 SOAS 260, SEW 300, SANSQ 313, SOAS 404, SWTO 520, 521</i>	

NAVMC 3500.14
3 Jul 07

APPENDIX A

GLOSSARY OF TERMS

ACM - Air Combat Maneuvering. See OPNAVINST 3710.7 for definition.

AD - Aerial Delivery. Any flight in which aircraft release parachuting personnel, sensors, equipment or supplies (other than ordnance).

AIE - Alternate Insertion/Extraction. Any flight employing the various insertion and extraction techniques employed by the MV-22 i.e. SPIE, FASTROPE, Rappelling.

Aircrew - A collective term that applies to all categories of personnel in a flight status.

AG - Air-to-Ground. Any VMC/IMC flight designed to attack surface targets with conventional unguided ordnance.

AGT - Aviation Ground Training.

AGO - An Aerial Gunner/Observer is an individual who assists the Crew Chief in the cabin of a helicopter and has been thoroughly briefed by the Aircraft Commander on lookout doctrine, obstacle clearance calls, ICS utilization and emergencies. Performing as a flight crewmember, the Aerial Gunner/Observer shall have a current flight physical, aviation physiology training, N5 water survival training, N7 HEEDS training, annual NATOPS evaluation and wear all flight equipment per the OPNAVINST 3710.7 series (see definition of Flight Crew in OPNAVINST 3710.7).

AMA - Apprentice METOC Analyst. An entry level Meteorological and Oceanographic (METOC) Services Marine who has received basic and intermediate training in METOC sciences. The AMA is responsible for conducting METOC sensing of surface and upper atmospheric elements and reporting of the elements. The AMA continues to hone proficiency in the core skills of analysis and forecasting of METOC parameters through supervised forecast product generation.

AMC - Air Mission Commander. An experienced aviator who has in-depth knowledge of the MACCS, airspace management, fire support coordination, fixed and rotary wing operations and capabilities. The AMC is responsible for the accomplishment of the air mission.

AMTI - Airborne Moving Target Indicator. Any flight designed to develop proficiency conducting day and night system ordnance deliveries on moving targets.

APH - Aerial Photography. Any flight designed to develop hand held camera proficiency.

APR - Aircrew Performance Record. The squadron training officer maintains the APR per Appendix E of this Manual.

AR - Aerial Refueling. Any flight designed to develop the ability of aircrews to perform tactical aerial refueling operations, day and night, to include helicopter in-flight refueling from a ship.

ASC(A) - Assault Support Coordinator (Airborne). An experienced aviator who operates from an aircraft to provide coordination and procedural control during assault support operations. The ASC(A) acts as an agency of the MACCS and is an airborne extension of the DASC or HDC.

ASTO - Advanced Systems Tactics and Ordnance. Any flight designed to develop proficiency conducting day, night IMC system tactics and ordnance deliveries using intra-cockpit aircraft weapon systems displays.

AWI - All Weather Intercept. Any single aircraft, air-to-air weapons systems intercept, commenced beyond visual range where weapons engagement does not depend on visual identification.

AWCAS - All Weather Close Air Support. Any systems ordnance flight flown in instrument or simulated instrument conditions.

AWT - Arctic Weather Training. Any flight designed to train for operations in an arctic environment.

Battlefield Illumination - Any flight designed to deliver aircraft parachute flares.

Brief - Conducted prior to a flight/event to discuss all aspects of the item or a discussion of the evolution as a whole.

CAL - Confined Area Landings. Any landing pattern work flown to sites or landing zones in which terrain/obstacle clearance techniques and cautions become the primary objective.

CASEVAC - Casualty Evacuation. Any flight designed to demonstrate casualty evacuation procedures.

CAT - Categories of Training. Conversion matrix for USN to USMC Program of Instruction (POI).

- a. Category I (CAT I). This equates to the Basic POI.
- b. Category II (CAT II). This equates to the Basic POI.
- c. Category III (CAT III). This equates to the Refresher POI.
- d. Category IV (CAT IV). This equates to the Modified Refresher program (MRF).
- e. Category V (CAT V). Other POIs not described above.

Certification - A certification refers to the evaluation process conducted during syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency of a crewmember as a prerequisite to qualification or designation. For aviation ground communities, a certification serves to ascertain one-time proficiency evaluation for a given position.

Core Capability - Core Capability is a unit-centered training readiness calculation that assists operations departments and commanding officers in determining a percentage-adjusted MET Output Standard given crew manning constraints. Closely related to Core METL output standards, unit Core Capability is a calculated measure of performance that may differ from the MET Output Standard since expected ability to achieve output standards may be reduced as crew manning is reduced. Core Capability is not a reportable item but may assist units in predicting achievable output standards based on their specific crew manning percentages. Core Capability is primarily used in determining manning-adjusted CMMR per appendix D (Mission Essential Task-Based Core Model Report).

Core Competency - Unit Core Competency is a collective term that entails requirements, capabilities, and information delineated in the applicable unit mission statement, METL, appropriate T/O information, Output Standards, Core Model

Minimum Requirements, and supporting tables such as METL/Core Skill matrix and qualification/designation tables.

Core Competency Model - The foundation of every T&R program, the core competency model, or "Core Model" establishes the basic structure around which each T&R program is created. The core competency model, contained in the opening chapters of each specific T&R manual, links community Mission Statements, Mission Essential Task Lists, Output Standards, Core Skill Proficiency Requirements and Combat Leadership Matrices.

Core Competency Resource Model (CCRM) - The Marine Corps Unit Core Competency Resource Model directly links the T&R program with USMC flying hour and readiness reporting (SORTS) programs. The CCRM, accredited by the Commandant of the Marine Corps, generates annual sortie and flight hour requirements (broken down by training, support and operational category) for maintaining selected T-Level readiness ratings for each tactical aviation squadron.

Core Model Minimum Requirement (CMMR) - The Community CMMR reflects the ability of a unit to perform its Output Standards. Unit CMMR is defined in terms of aggregate unit crew Core Skill Proficiency (CSP) and leadership requirements. Unit CMMR is reflected in core model tables (Minimum Unit Core Skill Proficiency Requirements, Minimum Combat Leadership Requirements).

Core Skill - Core skills are specific mission-related task areas that support a community's METL. Core skills consist of like T&R events and are normally delineated as T&R stage titles. Core skills are introduced in FRS and entry-level school training. Core skill training continues in a tiered approach through all phases of a T&R syllabus.

Core Skill Proficiency (CSP)

a. Individual CSP - An individual who has attained and maintained a "proficient" status in all T&R designated events, by core skill. Individual CSP shall be based on T&R Individual CSP Attain and Maintain requirements.

b. Crew-Served - For "crew-served" aircraft/system, a "crew" is defined by each community for each core skill in accordance with the applicable T&R manual. For example, the crew definition for the core skill "Confined Area Landing" for the CH-53E community is 2 Pilots, 1 Crew Chief, 1 Aerial Observer/Gunner. A CSP Crew is a crew where each of the crew positions listed can be filled with an individual who has attained and has maintained a "proficient" status in all T&R designated events, by core skill.

c. Unit CSP - Unit CSP shall be defined in terms of numbers of individuals or crews required to be proficient in each core skill. A CSP Unit (T-2) maintains a minimum number of CSP Crews in each core skill, in accordance with rules and methods set forth in MCO P3500.14 series.

Collective Training Standards (CTS) - Criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units. They include tasks, conditions, standards, evaluator instructions, and key indicators. CTS are found within collective (unit) training events found in T&R manuals. CTS are built upon Individual Training Standards (ITS).

Community - A collective term used to identify all aviation units and personnel associated with an individual Aviation T&R Manual (E.G. model aircraft, MACCS system, aviation ground MOS).

CPL - Cargo and Passenger Loading. Any flight required to carry passengers and/or cargo.

Crew Resource Management - Replaces Aircrew Coordination Training (ACT) term.

Crewmember - A collective term that applies to all categories of personnel who operate an aircraft or system.

CRP - Combat Readiness Percentage. The percentage of a specific tactical aircraft/aviation ground agency syllabus in which personnel are "proficient." Four basic categories divide CRP into a total percentage of "proficiency" personnel have demonstrated within their respective syllabi as shown below:

Core Skill Introduction	60 percent CRP
Core Skill Basic	75 percent CRP
Core Skill Advanced	95 percent CRP
Core Plus	100 percent CRP

CQ - Carrier Qualification. Any flight designed to demonstrate the aircrew's ability to conduct shipboard landing operations day or night.

CST - Combined Strike Tactics. Tactical training sorties in which several aircraft types join in a combined mission: Alpha Strike, Helo Assault, etc.

Currency - Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of CRP. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in Chapter 5.

C2W - Command and Control Warfare. The integrated use of operational security, military deception, psychological operations, electronic warfare, and physical destruction, mutually supported by intelligence to deny information to, influence, or destroy adversary command and control capabilities while protecting friendly command and control capabilities against such action.

DACM - Defensive Air Combat Maneuvering. The maneuvering of attack or utility helicopters in response to an airborne threat.

DACT - Dissimilar Air Combat Tactics. Tactical training conducted between dissimilar aircraft models.

DCM - Defensive Combat Maneuvers. Flights in the MV-22 syllabus including the defensive tactics versus airborne threats.

Demonstration - The description and performance of a particular maneuver/event by the instructor, observed by the PUI/student. The PUI/student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver/student.

DES - Desert Operations. Any flight designed to train for operations in a desert environment.

DEFTAC - Defensive Tactics. Those aircraft maneuvers performed by aircraft possessing no offensive armament in response to airborne threats. Performed as last ditch tactics when efforts to escape detection have failed.

Designation - A designation is a status assigned to an individual based on leadership ability. A designation is a command specific and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R manuals. Commanders shall issue a designation letter to the

individual upon the occasion of original designation, with appropriate copies, for inclusion in the NATOPS jacket and IPR.

DM - Defensive Measures. Flights in assault support helicopters utilizing defensive tactics versus airborne threats.

Discuss - An explanation of systems, procedures, or maneuvers during the brief, in-flight/mission, or post-flight/mission.

EA - Electronic Attack. That division of electronic warfare involving the use of electromagnetic energy, directed energy, or antiradiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires. EA includes: 1) actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception; and 2) employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams).

EAF - Expeditionary Airfield. Any flight designed to demonstrate aircrew ability to conduct day or night field arrestments and short field take-offs.

ES - Electronic Warfare Support. That division of electronic warfare involving actions tasked by, or under direct control of, an operational commander to search for, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning and conduct of future operations. Thus, electronic warfare support provides information required for decisions involving electronic warfare operations and other tactical actions such as threat avoidance, targeting, and homing. Also called ES, Electronic warfare support data can be used to produce signals intelligence, provide targeting for electronic or destructive attack, and produce measurement and signature intelligence.

ESA - Emergency Safe Altitude. An altitude that provides a minimum of 1000 ft clearance above the highest obstacle that is within 25 nm either side of course line.

EP - Electronic Protection. That division of electronic warfare involving passive and active means taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability.

ESC - Escort. Any flight designed to escort fixed wing or assault support (Helo, KC-130) aircraft against simulated air or surface threats.

EVAL - Any flight designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

EVENT - See syllabus event.

EW - Electronic Warfare. Any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Also called EW. The three major subdivisions within electronic warfare are: electronic attack, electronic protection, and electronic warfare support.

EXT - External. Any flight in which a helicopter externally suspends and transports weights, cargo, vehicles, or aircraft.

FA - Flight Attendant Training. Any flight designed to demonstrate flight attendant procedures.

FAC(A) - Forward Air Controller (Airborne). A specially trained and qualified aviation officer who exercises control from the air of aircraft engaged in close air support of ground troops, as well as control of surface based supporting arms as required. The FAC(A) is normally an airborne extension of the Tactical Air Control Party.

FAM - Familiarization. Any event in which aircrew/MACCS personnel gain basic knowledge of aircraft flight or system characteristics, limitations, emergency procedures, and crew position responsibilities.

FBO - Forward Based Operations. Any F/W operations designed to train aircrews in ski jump, road and grass T/O and landings. FBO does not include shipboard operations.

FCLP - Field Carrier Landing Practice. Any flight designed to prepare aircrews for operation in an EAF or carrier environment using an optical landing system and/or LSO/LSE control.

FORM - Formation. Any flight designed to develop proficiency in basic section and/or division formation flying, day or night, and develop basic skills in tactical formations and maneuvering.

FRAG - Fragmentary Order Mission. Any flight in support of a designated unit for tasked airlift missions.

HA - Helicopter Attack. Any flight designed to teach the fundamentals of and/or develop proficiency in any aspect of helicopter attack.

HIE - Helicopter Insertion/Extraction. Any flight demonstrating the various insertion and extraction techniques employed by rotary-wing aircraft i.e. SPIE, FASTROPE, Rappelling.

INST - Instruments. Any flight involving the aircrew's ability to execute aircraft maneuvers under instrument conditions while complying with IFR procedures and using installed NAVAIDS.

INT - Internal. Any flight in which a helicopter internally carries cargo, equipment, or weights.

IUT - Instructor Under Training. Any event designed to train an individual as an instructor.

Individual Core Skill Proficiency (CSP) - Individual core skill proficiency is a status based on T&R event requirements an individual must concurrently attain proficiency in, and T&R event requirements an individual must maintain proficiency in for each core skill. For example, an individual is either 'TERF CSP' or 'not TERF CSP.'

Introduce - The instructor may demonstrate a procedure/maneuver to a student, or may coach the PUI/student through the procedure/maneuver without demonstration. The PUI/student performs the procedures/maneuver with coaching as necessary. The PUI/student is responsible for knowledge of the procedures.

JMA - Journeyman METOC Analyst. A Meteorological and Oceanographic (METOC) Services Marine who has received basic and intermediate training in METOC sciences. The JMA is responsible for developing METOC forecasts. The forecasts are derived through application of atmospheric dynamics and physical theories and principles. The JMA continues to assess impacts to operations based upon METOC parameters. The JMA is one of the primary trainers and mentors of Apprentice METOC Analysts (AMA).

LAT - Low Altitude Tactics. Any flight designed to develop proficiency in low altitude tactics. The term LAT shall apply to tactical fixed wing operations

conducted during day or night VMC where the briefed intent is to conduct low altitude tactics below 500 ft AGL.

LFE - Large Force Exercise. A flight involving numerous aircraft integrated into a tactical training scenario.

MAC - Minimum Altitude Capable. That altitude below comfort level at which the pilot is capable of performing terrain clearance tasks only.

MAI - METOC Analyst Instructor. An intermediate or senior level Meteorological and Oceanographic (METOC) Services Marine who has received intermediate and advanced training in METOC sciences. MAIs are qualified to provide instruction and training to AMA's and JMA's for T&R qualifications and designations. The MAI is the primary trainer and mentor of AMAs and JMAs for impact assessments.

MAT - Mountain Area Training. Any flight in which the aircrew perform low/pattern work in mountains, valleys, or canyons.

MEDEVAC - Medical Evacuation. Any flight designed to demonstrate medical evacuation procedures.

Minimum Altitude - The lowest authorized altitude for a specific syllabus requirement.

MMA - Master METOC Analyst. A senior level Meteorological and Oceanographic (METOC) Services Marine who has received intermediate and advanced training in METOC sciences. The forecasts are derived through application of atmospheric dynamics and physical theories and principles. The MMA continues to assess impacts to operations based upon METOC parameters. The MMA is the primary trainer and mentor of AMAs and JMAs.

MSA - Minimum Safe Altitude. An altitude that provides a minimum of 500 feet clearance above the highest obstacle that is within 5 NM either side of course line or planned course deviation for that leg of the route. MSA shall be briefed for all LAT training.

MSEL - Master Scenario Events List. A master list of milestones and/or significant events in an exercise.

NAPP - Naval Aviator Production Process. A CNO-initiated program to focus on improving the process of producing first tour NAs and NFOs. See paragraph 801.

NATOPS Jacket - The squadron NATOPS Officer maintains the aircrew NATOPS Flight Personnel Training/Qualification Jacket (NATOPS jacket) per OPNAVINST 3710.7.

NAV - Navigation. Any flight designated to develop aircrew ability to plan and execute navigation using aeronautical charts, visual checkpoints, RADAR, or electronic navigational systems.

NBC - Nuclear, Biological, and Chemical. Any flight designed to train for operations in an NBC environment.

NVD - Night Vision Device. An electro-optical device used to provide a visible image using the electromagnetic energy available at night.

NVG - Night Vision Goggles. Any day or night flight where helmet mounted, night imaging device flying techniques receive priority instruction.

OAAW Manager - Offensive Anti-Air Warfare Manager. Aircrew responsible for coordinating the attack of surface to air threats systems in support of close air support and armed reconnaissance mission.

OBS - Observer. An individual who has satisfied the aero medical and applicable T&R requirements and is designated in writing by the commanding officer (see definition of Flight Crew in OPNAVINST 3710.7).

OPS - Operations Training. Any syllabus event in MACCS T&R Manuals in which MACCS personnel develop proficiency in operating air control equipment in conjunction with external assets; i.e., aircraft, other agencies, etc.

Phase - A group of events delineating one of four T&R syllabus tiers (Core skill introduction, core skill basic, core skill advanced, core plus).

Point Defense - Actions to protect a defended vital area against an air-to-surface or surface-to-surface threat.

Practice - The performance of a maneuver or procedure by the PUI/student that may have been previously introduced in order to attain a specified level of performance.

Prerequisite - See syllabus event.

Proficiency - Proficiency is a measure of achievement of a specific skill. Refly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an individual exceeds the refly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with an instructor from a like unit. If this is not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

PUI - Pilot Under Instruction.

QUAL - Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R manuals. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter. Individuals do not lose a qualification as a function of refly factor for individual events. Loss of proficiency (delinquent refly factor) for all associated qualification events (events with measurable refly factor; "*" refly factor events excluded) constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R manuals.

RGR - Rapid Ground Refueling. Ground method of providing fuel to an aircraft utilizing another aircraft in an austere location.

RECON - Reconnaissance. Any flight that includes the use of fixed-optical or electronic sensors.

Refly Factor - The maximum time between syllabus events requiring a specific skill wherein the unit can expect the average aircrew/MACCS personnel to maintain their acquired level of proficiency.

Review - Demonstrated proficiency of a maneuver by the PUI/student.

RQD - Requirements, Qualifications, Designations. Normally tracking codes that facilitate management of unit requirements/qualifications/designations as well as aviation ground individual certifications.

SAR - Search and Rescue. Any flight designed to demonstrate search and rescue procedures and techniques.

SCAR - Strike Coordination and Reconnaissance. Any tasks conducted airborne and facilitating the coordination of strike aircraft through a TAI in a DAS scenario by providing targeting and threat information, and reconnaissance. Any OAS aircraft is capable of providing SCAR.

SIM - Simulator Training. Any syllabus requirement within a T&R manual where personnel develop proficiency through simulated training requiring no asset support; i.e., aircraft, other agencies, etc. external to the parent unit.

Stage - A group of similar T&R events (normally like Core Skill events) in numerical sequence within a Phase.

SWD - Special/Specific Weapons Delivery. Any flight designed to introduce or expose aircrews to the tactical employment of live weapons to include AIM-7, AIM-9, AIM-120, air-to-air guns, Hellfire, Stinger, TOW, JDAM, JSOW, Maverick, etc.

Syllabus Event - A flight or ground training evolution required by an individual syllabus.

a. Event Status. A 'Never Been Attempted' (NBA) status indicates an event that has never been successfully completed or updated via T/C stage completion (no proficiency date). A 'Incomplete' status means the individual was scheduled and attempted to complete the event but did not complete all event requirements. A 'proficient' status indicates that the number of days between the proficiency date and the reference date must be equal to or less than the refly interval. A 'delinquent' status indicates that the number of days between the proficiency date and the reference date (usually "today") exceeds the refly interval.

b. Delinquent Syllabus Event. An event is delinquent when the crew member exceeds the "refly factor" for that particular event. The individual may update the delinquent event by reflying that event with a current and proficient crewman/flight lead. Delinquent events are not updated through chaining.

c. Deferred Syllabus Event. An event that is delayed in the normal training progression cycle due to a lack of a logistic support or training assets. See paragraph 202.4.a for event deferral policy detail.

d. Waived Syllabus Event. When an event is waived, the individual's proficiency date for that event shall be manually updated in M-SHARP and the individual remains proficient through the respective event refly interval. See paragraph 202.4.a for event waiver policy detail.

e. Prerequisite. A prerequisite is a requirement that must be successfully completed prior to commencing another training requirement unless otherwise stated in a community T&R. See paragraph 603.12.d (T&R Syllabus Format), note 13, for additional prerequisite information.

SYS - System Training. Any syllabus event requiring MACCS personnel to gain knowledge in the hardware/equipment/system that they operate.

T&R Deviation - Divergence from accepted T&R policy. CG TECOM (ATB) is the approval authority for deviations from T&R policy.

TAC - Tactics. A syllabus flight including the conduct of a tactical mission using a defined threat scenario.

TAC(A) - Tactical Air Coordinator (Airborne). A flight designed to control and/or coordinate supporting arms and aircraft in the same battle area; requires TAC(A) to maintain strict coordination procedures with controlling agencies and supported units.

TERF - Terrain Flight. Any helicopter event structured to occur below 200 ft AGL. Terrain flight employs terrain, vegetation, and man-made objects to degrade the enemy's ability to detect a helicopter. TERF includes the following basic flight techniques: low level, contour, and nap of the earth (NOE).

Threats - Air threat environments are categorized as follows:

a. Low Threat. An air threat environment that permits combat operations and support to continue without prohibitive interference. Associated tactics and techniques do not formally require extraordinary measures for preplanned or immediate support. Enhancements to target/objective engagement are effective communications, accurate target/objective identification, and re-attacks if applicable (limited only by aircraft time on-station and ordnance onboard).

b. Medium Threat. An air threat environment in which the specific aircraft performance and weapons systems capability allow acceptable exposure time to enemy air defenses. This air threat environment restricts the flexibility of tactics in the immediate target/objective area. It is an environment in which the enemy may have limited RADAR and/or electro-optical (EO) acquisition capability at medium range, but a fully integrated fire control system does not support the air defense system. Medium air threat environments normally allow medium altitude missions/attack deliveries with low probability of engagement by enemy air defenses.

c. High Threat. An air threat environment created by an opposing force possessing air defense combat power, including integrated fire control systems and electronic warfare (EW) capabilities that would seriously diminish the ability of friendly forces to provide necessary air support. This air threat environment might preclude missions such as immediate CAS, since the requirements for effective radio communications and coordination may not be possible. The high air threat environment may include, but is not limited to, command and control network; mobile and/or stationary surface-to-air missiles (SAMs); early warning radars; electronic warfare (EW); integrated (AAA) fire control systems; interceptor aircraft; and wartime reserve modes.

Tier - A level of training, synonymous with the term "phase."

TLZ - Temporary Landing Zone. A natural, semi-prepared or prefabricated strip with surface, slope, dimensions, load-bearing capacity, and clearance from obstructions sufficient to allow suitably trained crews to land and take off safely in good weather conditions.

Unit Core Skill Proficiency (CSP) - Unit CSP is defined in terms of numbers of individuals or crews required to be proficient in each core skill.

VIP - Very Important Person Mission. Any flight designed to demonstrate procedures for carrying VIP passengers.

VR - Visual Reconnaissance. Any VMC flight designed to locate targets, assess topography, or assess the enemy order of battle.

APPENDIX B

LIST OF ACRONYMS/CODE DESIGNATIONS

AA	Air-to-Air
AAA	Anti-Aircraft Artillery
AADC	Area Air Defense Commander
AAH	Advanced Aircraft Handling
AAR	Air-to-Air Refueling
AAW	Anti-Air Warfare
ACAD	Academics
ACE	Aviation Combat Element
ACM	Air Combat Maneuvering
ACMI	Air Combat Maneuvering Instructor
ACQ	Acquisition
ACTI	Air Combat Tactics Instructor
ACWD	Advanced Conventional Weapons Delivery
AD	Aerial Delivery
ADC	Air Defense Coordinator
ADP	Aeronautical Designated Personnel
ADS	Aerial Delivery System
Adv	Advanced
AES	Airfield Emergency Services
AG	Air-to-Ground (Fixed wing)
AG	Aerial Gunnery (Rotary Wing)
AGO	Aerial Gunner/Observer
AGL	Above Ground Level
AHC	Attack Helicopter Commander
AI	Air Interdiction/Air Intercept
AIE	Alternate Insertion/Extraction
ALZ	Assault Landing Zone
AMA	Apprentice METOC Analyst Qualified
AMC	Air Mission Commander
AIE	Alternate Insertion/Extraction Techniques
AIM	Air Intercept Missile
AMTI	Airborne Moving Target Indicator
ANSQ	Advanced Night System Qualification
AOA	Angle of Attack
AOS	Airfield Operations Specialist
APAM	Antipersonnel Anti-mechanized
APR	Aircrew Performance Record
AR	Armed Reconnaissance/Aerial Refueling
ARIP	Aerial Refueling Initial Point
ARBS	Angle Rate Bombing System
ARCP	Air Refueling Control Point
ARNAV	Aerial Refueling Navigation
A/S	Aircraft preferred, simulator optional
AS	Air-to-Surface
ASE	Aircraft Survivability Equipment/Assault Support Escort
ASE	Air Support Element
ASM	Air-to-Surface Missile
ASR	Authorized Strength Report
ASTO	Advanced Systems Tactics Ordnance
ASWD	Aerial Specific Weapons Delivery
ATC	Air Traffic Control
ATQ	Adversary Tactics Qualified
ATI	Adversary Tactics Instructor
ATM	Air Tasking Message
ATO	Air Tasking Order
ATRIMS	Aviation Training and Readiness Information Management System
ATSS	Aviation Training Support System
AV	Avionics
AVO	Advanced Visual Ordnance

AWACS	Airborne Warning and Control System
AWCAS	All Weather Close Air Support
AWI	All Weather Intercept
AWT	Artic Weather Training
B	Basic
BAM	Basic Aircraft Maneuvering
BARCAP	Barrier Combat Air Patrol
BARO	Barometric Bombing Mode
BCWD	Basic Conventional Weapons Delivery
BDA	Bomb Damage Assessment
BDU	Bomb Dummy Unit
BI	Battlefield Illumination
BIT	Built in Test
BIP	Basic Instructor Pilot
BMNT	Beginning Morning Nautical Twilight
BVR	Beyond Visual Range
C2W	Command and Control Warfare
C	Conversion
CAL	Confined Area Landing
CAP	Combat Air Patrol
CAS	Close Air Support
CASEVAC	Casualty Evacuation
CATM	Captive Air Training Missile
CC	Crew Chief
CCIP	Continuously Computed Impact Point
CCRM	Core Competency Resource Model
CCUI	Crew Chief Under Instruction
CDS	Container Delivery System
CEP	Circular Error Probable
CK or X	Check Flight
CL	Comfort Level
CMMR	Core Model Minimum Requirements
COL	Combat Offload
comm-out/comm-in	No communication/with communication
COMNAV or CNI	Communication, Navigation, Identification
COMOPTEVFOR	Commander Operational Test and Evaluation Forces
COMSEC	Communications Security
CON	V/STOL Consolidation
CONLABS	Conventional Low Altitude Bombing System
COT	Cockpit Orientation Trainer
CP	Copilot
CPL	Cargo and Passenger Loading
CPT	Cockpit Procedures Trainer
CQ	Carrier Qualification
CRM	Crew Resource Management
CRP	Combat Readiness Percentage
CRRC	Combat Rubber Raiding Craft
CRT	Combat Rated Thrust
CSC	Core Skill Complete
CSIX	Core Skill Introduction Check
CST	Coordinated Strike Tactics/Cockpit Systems Training
CTC	Climb to Cope
CTO	Conventional Takeoff
CTOL	Conventional Takeoff/Landing
CTS	Collective Training Standards
CV	Fixed Wing Aircraft Carrier
D	Day Only
DACM	Defensive Air Combat Maneuvering (RW)
DACT	Dissimilar Air Combat Tactics
DAS	Deep Air Support
DASC	Direct Air Support Center
DCA	Defensive Counter Air

DACM	Defensive Air Combat Maneuvering
DACMI	Defensive Air Combat Maneuvering Instructor
DCM	Defensive Combat Maneuvers
DCMI	Defensive Combat Maneuvers Instructor
DECM	Defensive Electronic Countermeasures
DEFTAC	Defensive Tactics
DEFTACI	Defensive Tactics Instructor
DES	Desert Operations
DESG	Designation
DIFDEN	Duty in a Flying Status Flight Activity Denied
DIFOP	Duty in a Flying Status Involving Operational or Training Flights
DIV LDR	Division Leader
DL	Data Link
DLUT	Division Lead under Training
DM	Defensive Measures
DMI	Defensive Measures Instructor
DMT	Dual Mode Tracker
DR	Dead Reckoning
DWEST	Deep Water Environmental Survival Training
E	Evaluated
EA	Electronic Attack
EAF	Expeditionary Airfield
ECMO	Electronic Countermeasures Officer
ECQ	Field Expeditionary/Carrier Landing Qualification
EENT	End of Evening Nautical Twilight
EMCON	Emission Control
EP	Electronic Protection/Emergency Procedures
ER/DL	Extended Range/Data Link
ERO	Engine Running On/Off Load
ES	Electronic Support
ESA	Emergency Safe Altitude
ESC	Escort
ESIM	Emergency Simulator
EVM	Evasive Maneuvering
EW	Electronic Warfare
EW/C	Early Warning and Control
EWCAS	Electronic Warfare (supported) Close Air Support
EWCT	Early Warning Control Team
EWSIM	Electronic Warfare Simulator
EWT	Extreme Weather Training
EVAL	Evaluation
EXT	External Cargo Operations
EXTWT	External Weights
FA	Flight Attendant
FAC	Forward Air Controller
FAC(A)	Forward Air Controller Airborne
FAC(A)I	Forward Air Controller Airborne Instructor
FAE	Fuel Air Explosive
FAI	Flight Attendant Instructor/Familiarization and Instrument Training
FAM	Familiarization
FAUI	Flight Attendant Under Instruction
FBO	Forward Base Operations
FCF	Functional Check Flight
FCLP	Field Carrier Landing Practice
FCP	Functional Check Pilot
FE	Flight Engineer
FEI	Flight Engineer Instructor
FF	Fire Fighting
FI	Fighter Intercept
FIREX	Firing Exercise

FL	Flight Leadership
FLIP	Flight Information Publication
FLIR	Forward Looking Infrared
FM	Flight Mechanic
FORM	Formation
FRS	Fleet Readiness Squadron
FS	Front Seat
FSI	Forecast Support Qualified
FSQ	Forecast Support Qualified
FW	Fixed Wing
FWF	Fixed Wing Fragger (TACC)
FXP	Fleet Exercise Procedure
GCE	Ground Combat Element/Ground Convoy Escort
GCI	Ground Controlled Intercept
GPS	Global Positioning System
GTR	Ground Threat Reaction
H2P	Helicopter Second Pilot
HA	Helicopter Attack
HAC	Helicopter Aircraft Commander
HAHO	High Altitude High Opening
HALO	High Altitude Low Opening
HAR	Helicopter Aerial Refueling
HARM	High Speed Anti-radiation Missile
HCPT/HELO	Helicopter
HE	High Explosive or Heavy Equipment
HIE	Helicopter Insertion/Extraction
HIGE	Hover In Ground Effect
HILOFT	High Angle Loft Weapons Delivery
HLL	High Light Level
HOGF	Hover Out of Ground Effect
HOTAS	Hands on Throttle and Stick
HUD	Heads Up Display
I	Instructor
ICLS	Instrument Carrier Landing System
ICO	Interface Coordination Officer (TACC)
ICP	Instrument Check Pilot
ICS	Intercommunications
IDSG	Instructor Designation
IFMT	In-flight Medical Technician
IFR	Instrument Flight Rules
ILM	Instructor Loadmaster
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IMN	Indicated MACH Number
IN	Instructor NFO
INS	Inertial Navigation System
INST	Instruments
INT	Internal or Intercepts
INTWT	Internal Weights
INUT	Instructor NFO Under Training
IP	Instructor Pilot
IPR	Individual Performance Record
IR	Infrared
IRCM	Infrared Countermeasures
ISD	Instructional Systems Development
ITO	Instrument Takeoff
IUT	Instructor Under Training
JATO	Jet Assisted Takeoff
JINTACS	Joint Interoperability Tactical Air Command System
JMA	Journeyman METOC Analyst Qualified

JMEMS	Joint Munitions Effectiveness Manual Series
KIO	Knock It Off
LAAD	Low Altitude Air Defense
LAT	Low Altitude Tactics
LATI	Low Altitude Tactics Instructor
LFE	Large Force Exercise
LGB	Laser Guided Bomb
LHA	Landing Helicopter Amphibious Ship (Helicopter/VSTOL Carrier)
LHD	Landing Helicopter Ship (Helicopter/VSTOL Carrier)
LLL	Low Light Level
LM	Loadmaster
LMUI	Loadmaster Under Instruction
LPH	Landing Platform Helicopter Ship (Helicopter/VSTOL Carrier)
LRAR	Long Range Aerial Refueling
LRNAV	Long Range Navigation
LSE	Landing Signal Enlisted
LSO	Landing Signal Officer
LSS	Landing Site Supervisor
LST	Laser Spot Tracker
LUX	A measure of luminance
MAC	Minimum Altitude Capable
MACCS	Marine Air Command and Control System
MAG	Magnetic Degrees
MAI	METOC Analyst Instructor
MAT	Mountain Area Training
MC	Mission Commander
MCAD	Marine Corps Administrative Detachment
MCCRES	Marine Corps Combat Readiness Evaluation System
MCUT	Mission Commander Under Training
MECH	Target Area Tactics
METOC	Meteorological Oceanographic
MIN	Minimum
MINCOM	Minimum Communication
MITAC	Map Interpretation and Terrain Analysis Course
MMA	Master METOC Analyst
MMD	Moving Map Display
MOCA	Minimum Obstruction Clearance Altitude
MPD	Multipurpose Display
MPR	MACCS Performance Record
MPS	Mission Performance Standards
MRE	Mean Range Error
MRP	Mission Readiness Percentage
MSA	Minimum Safe Altitude
MSL	Mean Sea Level
MTR	Military Training Route
N	Night Only
NAC	Naval Avionics Center
NAI	Named Area of Interest
NATOPS	Naval Air Training and Operating Procedures Standardization
NAV	Navigation or Navigator
NAVI	Navigator Instructor
NAVFLIRS	Naval Flight Record Subsystem
NBC	Nuclear, Biological, and Chemical
NFWS	Navy Fighter Weapons School
NFO	Naval Flight Officer
NI	NATOPS Instructor
NM	Nautical Mile
NOE	Nap of the Earth
NS	Night Systems
NSAR	Night Search and Rescue

NSFS	Naval Surface Fire Support
NSI	Night Systems Instructor
NSFI	Night Systems FAM Instructor
NSQ	Night Systems Qualified
NSSI	Night Systems SAR Instructor
NTISR	Non-Traditional Intelligence, Surveillance and Reconnaissance
NVD	Night Vision Device
NVG	Night Vision Goggles
NVGCQ	Night Vision Goggle Carrier Qualification
NVGFCLP	Night Vision Goggle Field Carrier Landing Practice
O/W	Over Water
OAAW	Offensive Anti-Air Warfare
OAP	Offset-Aimpoint
OAS	Offensive Air Support
OCA	Offensive Counter Air
OCE	Officer Conducting Exercise
OFT	Operational Flight Trainer
OPSEC	Operational Security
P	Pilot
PA	Precautionary Approach
PMCF	Post Maintenance Check Flight
PNAV	Proficiency Navigation
PNB	Power Nozzle Braking
POI	Program of Instruction
PQM	Pilot Qualified In-model
PTT	Partial Task Trainer
PUI	Pilot Under Instruction
PUP	Pull Up Point
QUAL	Qualification
R	Refresher Aircrew
RA	Rescue Aircrew
RAI	Rescue Aircrew Instructor
RAUI	Rescue Aircrew Under Instruction
RAC	Replacement Aircrew or Refueling Area Commander or Rescue Aircrew
RADC	Regional Air Defense Commander
RADCON	Radiation Control
RADNAV	RADAR Navigation
RAP	Rappel Operations
RC	Rendezvous Controller
RCB	RADAR Controlled Bombing
RE	RAC Equivalent
RECON	Reconnaissance
REC	Reconnaissance/Requirements
REV	Review
RGR	Rapid Ground Refueling
RIO	RADAR Intercept Officer
RNO	Radio Net Operator
ROC	Rules of Conduct
ROE	Rules of Engagement
RPM	Revolutions Per Minute
RQD	Requirements, Qualifications, Designations
RS	Rear Seat
RTI	RADAR Target Identification
RTO	Range Training Officer
RVL	Rolling Vertical Landing
RVTO	Rolling Vertical Takeoff
RVTOL	Rolling Vertical Takeoff/Landing
RW	Rotary Wing

RWDACM	Rotary Wing Defensive Air Combat Maneuvering
RWF	Rotary Wing Fragger (TACC)
RWS	Range While Search
S	Simulator
SA	Surface Attack
S/A	Simulator preferred, aircraft optional
SAC	Supporting Arms Coordination/Senior Air Coordinator
SAM	Surface to Air Missile
SAR	Search and Rescue
SCAR	Strike Coordination and Reconnaissance
SEAD	Suppression of Enemy Air Defenses
SERE	Survival, Evasion, Resistance, Escape
SI	Strike Intercept
SID	Standard Instrument Departure
SLR	Side Looking RADAR
SLT	Simulated Laser Target
SLUT	Section Leader Under Training
SME	Subject Matter Expert
SO	Surveillance Operator
SOP	Standing Operating Procedure
SOTC	Specific Operations Tracking Codes
SSSC	Surface, Subsurface, Surveillance, and Control
SSWD	Surface Specific Weapons Delivery
STF	Special Training Flights
STANX	Standardization Check
STOL	Short Takeoff/Landing
SV	Simulator Visual
SWD	Special/Specific Weapons Delivery
SWD	Senior Weapons Director (TAOC)
SYSNAV	System Navigation
SYSTAC	System Tactics
T	Transition
T2P	Transport Second Pilot or Tiltrotor Second Pilot
T3P	Transport Third Pilot
TAI	Target Area of Interest
TAC	Tactics/Tiltrotor Aircraft Commander/Transport Aircraft Commander
TAC(A)	Tactical Air Coordinator (Airborne)
TAC(A)I	Tactical Air Coordinator (Airborne) Instructor
TACC	Tactical Air Command Center
TACFORM	Tactical Formation
TACNAV	Tactical Navigation
TACP	Tactical Air Control Party
TACTS	Tactical Aircrew Combat Training System
TAOC	Tactical Air Operations Center
TAR	Tactical Aerial Reconnaissance
TARCAP	Target Combat Air Patrol
TC	Terrain Clearance
TCA	Track Crossing Angle
TCT	Threat Counter-tactics
TCWD	Tactical Conventional Weapons Delivery
TDL	Tactical Data Information Link
TEMP	Temperature
TERF	Terrain Flight
TFS	Task Force Support
THRX	Threat Reaction
TLZ	Temporary Landing Zone
T/M/S	Type Model Series
TOT	Time on Target
TPC	Transport Plane Commander
TR	Training Rules
TRK	Tracking code

TRXN	Threat Reaction
TTT	Time to Target
TWS	Track While Scan
UAS	Unmanned Aerial Systems (formerly UAV)
UFC	Up-Front Control
UHC	Utility Helicopter Commander
UTIL	Utility
VAD	Vital Area Defense
VFR	Visual Flight Rules
VID	Visual Identification
VL	Vertical Landing
VNSL	Variable Nozzle Slow Landing
VR	Visual Reconnaissance
VS	Velocity Search
VSTOL	Vertical Short Takeoff/Landing
VTO	Vertical Takeoff
VTR	Video Tape Recorder
W	Waived
WAS	War-at-Sea
WEO	Weapons Employment Officer
WST	Weapons System Trainer
WTACI	Weapons and Tactics Aircrew Instructor
WTI	Weapons and Tactics Instructor
WTO	Weapons and Tactics Officer
WTR	Water Landings
WTT	Weapons Tactics Trainer

APPENDIX C

MISSION AND INSTRUCTOR DESIGNATIONS AND QUALIFICATIONS

Designations Qualifications are grouped as follows:

1. FLIGHT LEADERSHIP DESIGNATIONS
2. LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS
3. NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS
4. FW ACM QUALIFICATIONS AND DESIGNATIONS
5. RW DM/DACM QUALIFICATIONS AND DESIGNATIONS
6. TILTROTOR DCM QUALIFICATIONS AND DESIGNATIONS
7. ENLISTED FW AIRCREW DESIGNATIONS
8. WEAPONS AND TACTICS INSTRUCTORS
9. RW AERIAL GUNNERY (AG)
10. MARINE AIR COMMAND AND CONTROL CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS

1. FLIGHT LEADERSHIP DESIGNATIONS

(a) Section Leader. A designated Naval Aviator able to lead and direct a flight of two aircraft.

(b) Division Leader. A designated Naval Aviator able to lead and direct a flight of three or more aircraft.

(c) Flight Leader (RW only). A designated Naval Aviator able to lead and direct a flight of five or more aircraft.

(d) Mission Commander/AMC. A designated Naval Aviator or Naval Flight Officer able to lead and direct a mission. The Mission Commander is responsible for all phases of a mission except for those aspects of safety of flight directly related to the physical control of an aircraft and fall within the prerogatives of the pilot in command.

(e) Strategic Refueling Area Commander (RAC) (KC-130 only). A Strategic RAC is a qualified Naval Aviator able to plan and lead a long range ferry of tactical aircraft involving aerial refueling from KC-130s. The Strategic RAC is responsible for all refueling phases of the mission to include airspace coordination, flight planning, tanker and receiver fuel planning, path finding and emergency procedures.

(f) Tactical Refueling Area Commander (KC-130 only). A Tactical RAC is a qualified section or division leader able to plan and lead an aerial refueling mission of two or more KC-130s on a static orbit tanker track with multiple receiver aircraft.

2. LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS

a. FW Qualifications and Designations

(1) Low Altitude Tactics (LAT) Qualified. An aircrew certified as having completed the LAT qualification syllabus specified in the appropriate T&R syllabus.

(2) Low Altitude Tactics Instructor (LATI). An aircrew certified by a squadron WTI or MAWTS-1 instructor as having completed the MAWTS-1 Low Altitude Tactics Instructor Course. MAWTS-1 publishes the requirements and POI for LATI in the MAWTS-1 Course Catalog.

b. RW Qualifications and Designations

(1) Terrain Flight (TERF) Qualified. An aircrew certified as having completed required TERF events in the appropriate T&R syllabus.

(2) Terrain Flight Instructor (TERFI). A NA or CC certified by a TERFI as having completed the Terrain Flight Instructor Course. The requirements and POI for TERFI are contained in the appropriate T&R syllabus or the MAWTS-1 Course Catalog.

c. Tiltrotor Qualifications and Designations

(1) Low Altitude Training (LAT) Qualified. A pilot or aircrew certified as having completed the required LAT events in the MV-22 T&R syllabus.

(2) Low Altitude Training Instructor (LATI). A NA or CC certified by a MAWTS-1 designated LATI as having completed the LATI syllabus per the MAWTS-1 Course Catalog.

3. NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS

a. FW Qualifications and Designations

(1) Night Systems Qualified (NSQ). Aircrew certified as having completed the NSQ syllabus per the appropriate T&R syllabus. The aircrew is qualified to operate NS during training operations.

(2) Night Systems Qualified High/Low Altitude NSQ HI/Low. The following qualifications apply to FW aircraft that have NSQ HI and NSQ Low qualifications delineated in T&R syllabi.

(a) Night Systems Qualified High Altitude (NSQ HI). Aircrew certified as having completed the T&R prescribed NSQ HI syllabus under the supervision of a squadron NSI. The aircrew is qualified to operate NS during non-LAT operations.

(b) Night Systems Qualified Low Altitude (NSQ Low). Aircrew certified as having completed the T&R prescribed NSQ Low syllabus prescribed for NS LAT training under the supervision of a squadron NSI flight lead. The aircrew is qualified to operate NS during LAT operations.

(3) Night Systems Instructor (NSI). Aircrew certified by a MAWTS-1 instructor as having completed the NSI Course per the MAWTS-1 Course Catalog.

(4) Night Systems Low Altitude Tactics Instructor (NSLATI). Aircrew certified by a MAWTS-1 instructor as having completed the NSLATI Course per the MAWTS-1 Course Catalog. The NSLATI is qualified to instruct NS LAT training operations.

(5) Night Systems Familiarization Instructor (NSFI). Aircrew certified by the FRS as having completed the NSFI Course.

b. RW Qualifications and Designations

(1) Night Systems Qualified (NSQ)

(a) High Light Level (HLL). Aircrew certified as having completed the events for NSQ HLL per the appropriate T&R syllabus. The aircrew is qualified to transport troops in HLL.

(b) Low Light Level (LLL). Aircrew certified as having completed the required events for NSQ per the appropriate T&R syllabus. The aircrew is qualified to transport troops in LLL or HLL.

(2) Night Systems Familiarization Instructor (NSFI). A NA or CC certified by an NSI as having completed the NSFI Course in the MAWTS-1 Course Catalog. An NSFI is a FRS instructor only.

(3) Night Systems SAR Instructor (NSSI). A NA or CC certified by an NSI as having completed the NSSI Course in the MAWTS-1 Course Catalog. Previously certified NSIs can be designated an NSSI at the discretion of the squadron commanding officer.

(4) Night Systems Instructor (NSI). A NA or CC certified by a MAWTS-1 instructor as having completed the NSI Course in the MAWTS-1 Course Catalog. The NSI is qualified to instruct in all phases of RW night system training.

c. Tiltrotor Qualifications and Designations

(1) Night Systems Qualified (NSQ)

(a) High Light Level (HLL). Aircrew certified as having completed the required events for NSQ HLL per the appropriate T&R syllabus. The crewmember is embarked troops HLL qualified.

(b) Low Light Level (LLL). Aircrew certified as having completed the required events for NSQ LLL per the appropriate T&R syllabus. The crewmember is embarked troops HLL and LLL qualified.

(2) Night Systems Instructor (NSI). A NA or CC certified by a MAWTS-1 instructor as having completed the NSI Course in the MAWTS-1 Course Catalog. The NSI is qualified to instruct in all phases of tiltrotor night systems training.

4. FW ACM QUALIFICATIONS AND DESIGNATIONS

a. ACM/DEFTAC Qualified. A NA/NFO certified as having completed the appropriate air-to-air events within the appropriate T&R syllabus. The issued qualification letter shall differentiate whether the individual is ACM qualified or DEFTAC qualified.

b. ACM Flight Leader. A NA who is ACM or DEFTAC qualified and is designated to brief, lead, and debrief an ACM/DEFTAC mission.

c. Air Combat Tactics Instructor (ACTI). A NA/NFO certified by a MAWTS-1 instructor as having completed the MAWTS-1 ACTI Course.

d. Defensive Tactics Instructor (DEFTACI). A NA/NFO certified by a MAWTS-1 instructor as completing the MAWTS-1 DEFTACI Course.

e. Adversary Tactics Instructor (ATI). A NA or USAF exchange officer authorized or assigned to fly with VMFT-401, certified by a squadron ATI as having completed the ATI Course. The designation is applicable to VMFAT-401 only.

5. RW DM/DACM QUALIFICATIONS AND DESIGNATIONS

a. Defensive Measures (DM) Qualified. Aircrew certified as having completed the DM syllabus within the appropriate T&R syllabus.

b. Defensive Measures Instructor (DMI). A NA or CC certified by a MAWTS-1 instructor as having completed the MAWTS-1 DMI Course.

c. Defensive Air Combat Maneuvering (DACM) Qualified. Aircrew certified as having completed the DACM syllabus within the appropriate T&R syllabus.

d. Defensive Air Combat Maneuvering Instructor (DACMI). A NA or CC certified by a MAWTS-1 instructor as having completed the MAWTS-1 RW DACMI course.

6. TILTROTOR DCM QUALIFICATIONS AND DESIGNATIONS

a. Defensive Combat Maneuvers (DCM) Qualified. Aircrew certified as having completed the DCM syllabus within the appropriate T&R syllabus.

b. Defensive Combat Maneuvers Instructor (DCMI). A NA or CC certified by a MAWTS-1 Instructor as having completed the MAWTS-1 DCMI Course.

7. ENLISTED FW AIRCREW DESIGNATIONS

a. Enlisted Night Systems Instructor. A flight engineer, navigator or loadmaster certified by a MAWTS-1 instructor as having completed the MAWTS-1 Night Systems Instructor course.

b. Enlisted Instructor. A flight engineer, navigator or loadmaster certified by the squadron NATOPS officer as having completed the appropriate T&R Instructor Syllabus.

8. WEAPONS AND TACTICS INSTRUCTORS. A Weapons and Tactics Instructor (WTI) is an instructor certified by a MAWTS-1 instructor as having completed the WTI course. There are several types of WTIs:

a. Weapons and Tactics Instructor (WTI) - Naval Aviators (NA), Naval Flight Officers (NFO) and Crew Chiefs (CC).

b. Weapons and Tactics Instructor (WTI) - Air Control for Marine air command and control personnel.

c. Weapons and Tactics Instructor (WTI) - A METOC WTI is a METOC Officer who is a graduate of the Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) WTI course. These officers have advanced skills and knowledge to provide instruction in METOC operations and Tactics Techniques and Procedures (TTPs). They are METOC SMEs responsible for managing a METOC unit's Weapons and Tactics Training Program (WTTP) and ACE planners specializing in METOC operations.

9. RW AERIAL GUNNERY (AG)

a. AG Qualified. Aircrew certified as having completed the required AG events in the appropriate T&R syllabus.

b. AG Instructor (AGI). A crew chief or aerial gunner certified by a WTI Crew Chief as having completed the AG Instructor Course.

c. Tail Gunnery Instructor (TGI). A crew chief certified by a MAWTS-1 instructor as having completed TGI POI per the MAWTS-1 course catalog.

10. MARINE AIR COMMAND AND CONTROL CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS. For detailed listings and information concerning aviation ground certifications, qualifications and designations refer to the respective community T&R manual.

NAVMC 3500.14
3 Jul 07

Appendix D

**Marine Aviation
Mission Essential Task-Based
Core Model Training Report
(T-Level Calculation)**

EXECUTIVE SUMMARY

1. Purpose. To implement CG TECOM's solution to replace the current aviation unit Status of Resources and Training System (SORTS) report procedures (T-Level only) with a Mission Essential Task-Based method that leverages Marine Aviation's Core Competency Model.
2. Background. The 2000 Secretary of Defense Annual Report to the President and Congress stated, "In response to legislation of DoD internal review, the Department undertook an extensive and collaborative process to enhance the current readiness reporting system." The DoD established the Defense Readiness Reporting System (DRRS) to make readiness reporting more objective, timely, and accurate. The DRRS provides a "capabilities-based, adaptive, near real-time readiness reporting system." It requires a demonstrable link between Mission Essential Tasks (METs) and readiness reporting. Additionally, the Marine Aviation Campaign Plan 2002 directed that aviation readiness reporting transition from a focus on individual readiness to a unit readiness construct. The TECOM (ATB) Readiness Reporting Proposal provides a capabilities-based readiness assessment structure and process that more clearly demonstrates the link between the Mission Essential Tasks (METs) and aviation unit readiness reporting.
3. The TECOM (ATB) proposal provides a method that reports unit training readiness using, as its foundation, Marine Aviation's Training and Readiness (T&R) Manual Core Model. The proposed method reports unit T-Level capability in the context of two distinct but related readiness metrics. These metrics include Core Skill Proficiency (CSP) and Combat Leadership. Both of these metrics are evaluated based upon service-directed standards set forth within the CG MCCDC's MCO P3500.14 series (T&R Program Manual and aircraft community T&Rs).
4. The effort over the last few years on the core model has created an opportunity to improve unit training level measurement and reporting. Using the core model as the foundation, the proposed readiness reporting concept is sufficiently mature for software implementation.

squadron and agency is described in individual T&R manuals. Using an excerpt from the CH-53E Core Capability Statement as an example:

(1) A core capable CH-53 unit is able to sustain (X amount of sorties) on a daily basis during contingency or combat operations.

(2) The sortie rates are based on 1.8 hour average sortie duration and assumes:

- Greater than 70 percent FMC aircraft.
- Greater than 90 percent On Hand (O/H) crews (assigned).

(3) If unit FMC aircraft is less than 70 percent or **O/H crews are less than 90% of T/O crews, then Unit Core Capability will be degraded by a like percentage.** A core capable unit is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, or amphibious platform.

b. The Core Capability section of the CMTR is composed of several items including crew/personnel manning (O/H or "assigned"), crew/personnel manning (T/O or "authorized"), the Total Crews/personnel available, and the Total Crew/personnel O/H to T/O percentage (Figure 5).

CORE CAPABILITY PERCENTAGE			
	O/H	T/O	%T/O
PILOTS	34	38	0.89
CREW CHIEFS	26	26	1.00
AERIAL OBS/GUN (16ACFT*1.6)	26	26	1.00
CREWS	17	19	0.89
1. If %T/O >= .90, then CMMR is used for CMTL Development			
2. If %T/O < .90, then ACMMR [(%T/O)(CMMR)] is used for CMTL Development.			
Excess CC shall be added to AO/AG to Maximize Total "CREWS"			
Crew Definition: 2 Pilots, 1CC, 1AO/AG [Exceptions:FAM/INST & AR - 2Pilots only; INT-1CC/1AO/AG only; (In all cases, CC can fulfill AO/AG crew requirement.)			

Figure 5. Core Capability Percentage

4. Crew Definition

a. The total number of O/H crews refers to both the number of crewmembers that are assigned to a particular occupational specialty (pilot, crew chief) or skill designator (Aerial Observer/Aerial Gunner [AO/AG], etc.) and to the total number of whole crews authorized for the unit or T/O. The T/O number of crews is derived from the published wartime manning level that is seldom seen by Marine aviation units during peacetime operations.

b. Each T/M/S community (via the T&R manual) is required to define a "standard crew," by Core Skill, in order to support unit readiness reporting metrics. For example, a single-seat platform has a crew defined as one pilot. However, the crew definition can vary both by crew position and by core skill for a given community.

c. For example, in a multi-seat fixed wing community (EA-6B), the definition of a standard crew is based upon both the ratio of aircrew "types" in the cockpit

and on particular core skills. One CSP pilot and 1 CSP Electronic Countermeasures Officer (ECMO) define the "standard crew" in the core skills of FAM/NAV, FORM, and AR (1:1 ratio between pilots and ECMO). Figure 6 demonstrates that in all other core skills, 1 CSP pilot and 3 CSP ECMOs (1:3) define the "crew."

EA-6B Unit CSP Requirements			
CORE SKILL	PILOT	ECMO	CREWS
FAM/NAV	5	5	5
FORM	5	5	5
NS	5	15	5
AR	5	5	5
ES	5	15	5
EA	5	15	5
TRXN	5	15	5
OAS	5	15	5
TFS	5	15	5
DEFTAC	3	9	3

Figure 6. Crew Definition for Multi-Seat Fixed Wing Community

d. In the rotary wing community, all platform crew definitions are considered multi-seat and combinations of aircrew "types" define a "crew." In Figure 7 below, the CH-53E crew is defined as 2 CSP pilots, 1 CSP crew chief, and 1 CSP AO/AG for all core skills except AR which requires only 2 CSP pilots (other crew positions would be filled but there is no requirement for core skill proficiency at those positions).

CH-53E CMMR (Unit CSP Requirements) Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	32	-	-	16
INT	-	12	12	12
FORM	24	12	12	12
CAL	24	12	12	12
TERF	24	12	12	12
EXT	24	12	12	12
GTR	24	12	12	12
AR	12	-	-	6
CQ	24	12	12	12
AG	16	8**		8
TAC	16	8	8	8
HLL	24	12	12	12
LLL	16	8	8	8

Figure 7. Crew Definition for Rotary Wing Community (CH-53E)

5. Crews Assigned

a. The number of CSP crews is calculated within the CMTR and is based upon crew data. The maximum number of assigned crews is dependent upon the crew definition. For example, if a crew definition demands 2 CSP pilots, the total

"Crews" may be equivalent to the total number of O/H pilots divided by 2. However, if the total number of crew chiefs available were less than the number of pilot crews, then the crew chief number available would drive the number of total "Crews" down.

b. In Figure 8, the number of total "Crews" (Rotary Wing Unit) is limited by pilot O/H manning level ($34/2=17$).

	O/H	T/O	%T/O
PILOTS	34	38	0.89
CREW CHIEFS	26	26	1.00
AERIAL OBS/GUN (16ACFT*1.6)	26	26	1.00
CREVS	17	19	0.89
1. If %T/O >= .90, then CMMR is used for CMTL Development			
2. If %T/O < .90, then ACMMR [(%T/O)(CMMR)] is used for CMTL Development.			
Excess CC shall be added to AO/AG to Maximize Total "CREVS"			

Figure 8. Crews Available (Pilot Driven)

c. In Figure 9, the number of total "Crews" (16) is limited by crew chief O/H manning ($16/1=16$) even though the total number of pilots could provide 17 crews.

	O/H	T/O	%T/O
PILOTS	34	38	0.89
CREW CHIEFS	16	26	0.62
AERIAL OBS/GUN (16ACFT*1.6)	20	26	0.77
CREVS	16	19	0.84
1. If %T/O >= .90, then CMMR is used for CMTL Development			
2. If %T/O < .90, then ACMMR [(%T/O)(CMMR)] is used for CMTL Development.			
Excess CC shall be added to AO/AG to Maximize Total "CREVS"			

Figure 9. Crews Available (Crew Chief Driven)

6. Core Capability Percentage Adjustment

a. A unit that has a reduced number of pilots, crew chiefs, or AO/AGs may not be able to build the requisite number of crews required to accomplish a unit's fully-crewed (T/O) core capability statement.

b. The number of O/H crews divided by the number of T/O crews provides the Core Capability Percentage (%T/O) (Figure 10). If the Core Capability Percentage is less than 90%, then a corresponding percentage reduction is made to the published CMMR for each core skill and for each combat leadership designation (see CMMR section). This percentage reduction to CMMR is called the Adjusted CMMR (ACMMR) and it affects the calculated training level thresholds for each core skill and combat leadership designation in order to account for the reduced manning level. See paragraph 8 (CMTL Thresholds) of this appendix for more on this subject.

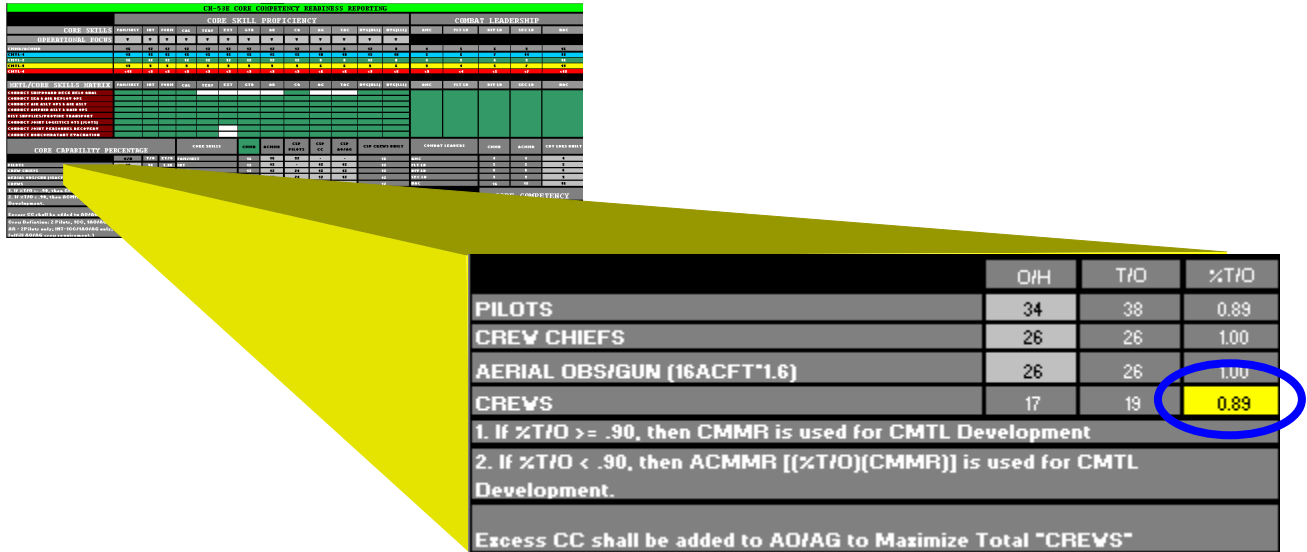


Figure 10. Core Capability Percentage Note Application

c. In the event that a lack of AO/AGs adversely affects the crew Core Capability Percentage, crew chief excess quantities can be applied to the AO/AG to bring the total crews to a higher number. Figure 11 demonstrates a low O/H amount of AO/AG negatively impacting Crew total. However, by adding "excess" crew chiefs to the AO/AG total we effectively raise the total number of O/H crews from 12 to 15. This calculation occurs within the CMTR with no user input required other than to ensure that the SARA or M-SHARP database contains all appropriate aircrew identification information required to identify and "count" the crews assigned.

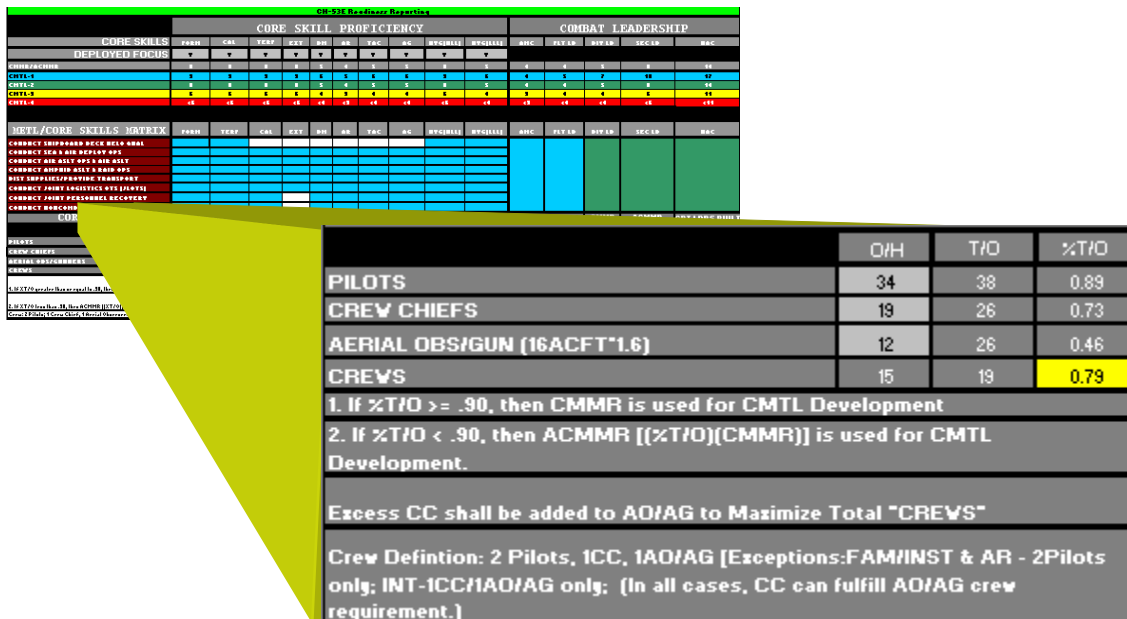


Figure 11. "Crew" Calculation via Crew Chief Excess

7. Core Model Minimum Requirement (CMMR). The CMMR for CSP reflects the number of CSP crews required by each T/M/S specific T&R manual for the unit to perform in accordance with its Core Capability Statement given 90% or more crew manning. In order to calculate the maximum number of CSP crews for a given Core Skill, the system must tally the number of individuals who are CSP in each Core Skill. In order to give the Pilot Training Officer, Operations Officer, etc. greater visibility, the numbers of CSP crewmen are provided via the CMTR. The individual aircrews are "counted" because they have first attained and then maintained core skill proficiency in accordance with the specific T&R. As shown in Figure 12, the number of crews (community determined) associated with each core skill is equivalent to the CMMR (with greater than or equal to 90% on hand aircrew).

CORE SKILLS	CMMR	ACMMR	CSP PILOTS	CSP CC	CSP AO/AG	CSP CREWS BUILT
FAM/INST	16	16	32	-	-	16
INT	12	12	-	12	12	12
FORM	12	12	24	12	12	12
CAL	12	12	24	12	12	12
TERF	12	12	24	12	12	12
EXT	12	12	24	16	16	12
GTR	12	12	24	12	12	12
AR	12	12	24	-	-	12
CQ	12	12	24	12	12	12
AG	8	8	16	8	8	8
TAC	8	8	16	8	8	8
HLL	12	12	24	12	12	12
LLL	8	8	16	8	8	8

Figure 12. CH-53E Core Model Minimum Requirement for CSP

8. Core Model Training Level (CMTL) Thresholds

a. CMTLs represent numbers of whole crews or combat leaders required to attain various levels of readiness within each core skill or combat leadership category. In order to derive the thresholds, a CMMR baseline value is used.

(1) CMMR Baseline. In order to produce a training level in terms of CSP Crews and Combat Leaders (and to adjust the requisite numbers based on Core Capability manning percentages), it is necessary to create CMTL threshold values in terms of numbers of CSP crews (and combat leaders) rather than the historical USMC Status of Resources and Training System (SORTS) Combat Readiness Percentage (CRP) metric as shown in Figure 13.

Unit T-Level	Unit Combat Readiness Percentage
T-1	>=85%
T-2	>=70%
T-3	>=55%
T-4	<55%

Figure 13. USMC SORTS (T-Level Metrics) (Historical)

(2) As discussed earlier, the CMMR number of crews and combat leaders is now the standard for measurement of unit training readiness. Therefore, CMMR is the "new" minimum T-2 level. Further, if CMMR and minimum T-2 are equivalent, then CMMR = 70%. This leads to the question, "70% of what?" We identify the "what" as

the "CMMR Baseline." Figure 14 displays a generic picture of CMTL threshold values for all unit CSP and combat leadership crew quantities. For further understanding of how this logic completes the picture, see section 8.b. (CMTL Calculation Formula).

CMTL-1	Unit achieved 85% of CMMR Baseline Number for CSP Crews or Combat Leaders.
CMTL-2	Unit achieved 70% of CMMR Baseline Number for CSP Crews or Combat Leaders.
CMTL-3	Unit achieved 55% of CMMR Baseline Number for CSP Crews or Combat Leaders.
CMTL-4	Unit achieved less than 55% of CMMR Baseline Number of CSP Crews or Combat Leaders.

Figure 14. Core Model Training Level Thresholds

(3) Actual threshold levels (in terms of crews) are calculated for each Core Skill and each Combat Leadership Designation using the method below. Given 90-100% crew manning and the CMMR values listed in Figure 15, follow the steps below to derive the CMTL Threshold values:

CORE CAPABILITY PERCENTAGE				CORE SKILLS	CMMR	ACMMR
	O/H	T/O	%T/O	FAM/INST	16	16
PILOTS	38	38	1.00	INT	12	12
CREW CHIEFS	26	26	1.00	FORM	12	12
AERIAL OBS/GUN (16ACFT*1.6)	26	26	1.00	CAL	12	12
CREWS	19	19	1.00	TERF	12	12
1. If %T/O >= .90, then CMMR is used for CMTL Development				EXT	12	12
2. If %T/O < .90, then ACMMR [(%T/O)(CMMR)] is used for CMTL Development.				GTR	12	12
Excess CC shall be added to AO/AG to Maximize Total "CREWS"				AR	12	12
Crew Definition: 2 Pilots, ICC, 1AO/AG [Exceptions:FAM/INST & AR - 2Pilots only; INT-ICC/1AO/AG only; (In all cases, CC can fulfill AO/AG crew requirement.)]				CQ	12	12
				AG	8	8
				TAC	8	8
				HLL	12	12
				LLL	8	8

Figure 15. Core Skills (CMMR) Based Upon 90-100% Manning (CH-53E)

(4) Complete all calculations through the last step and then round crews to the nearest whole number. If an even split exists between crews then round up to the next whole number.

b. CMTL Threshold Calculation Process Based Upon CMMR

Step 1. Identify Unit Manning Level (90-100%)

Step 2. Identify CMMR by Core Skill (from the T/M/S specific T&R). The source for CMMR for each Core Skill is the T&R Core Model.

Step 3. Calculate CMMR Baseline for each Core Skill. If 12 is the CMMR (T-2 or 70%) for a given core skill, then we determine the "CMMR Baseline" using the following formula:

If CMMR = .70x
Then CMMR/.70 = x

Therefore 12 = .70x
12/.7 = 17.14 (CMMR Baseline for this particular core skill)

Identify CMMR Baseline for each Core Skill using the above method.

Core Skill	FORM	CAL	TERF	EXT	DM
CMMR/.7	12/.7	12/.7	12/.7	12/.7	8/.7
CMMR Baseline	17.14	17.14	17.14	17.14	11.43

Core Skill	AR	TAC	AG	NVG(HLL)	NVG(LLL)
CMMR/.7	6/.7	8/.7	8/.7	12/.7	8/.7
CMMR Baseline	8.57	11.43	11.43	17.14	11.43

Step 4. Identify Appropriate Core Model Training Level Thresholds for each Core Skill.

Core Skill: FORM (Given aircrew manning at: 90-100% T/O)

Use CMMR Baseline for each core skill to determine CMTL Thresholds.

FORM: CMMR Baseline 17.14	
CMTL-1 $\geq .85(17.14) = 14.57$	CMTL-1 $\Rightarrow 15$ Crews
CMTL-2 $\geq .70(17.14) = 12.00$	CMTL-2 $\Rightarrow 12$ Crews Meets CMMR
CMTL-3 $\geq .55(17.14) = 9.43$	CMTL-3 $\Rightarrow 9$ Crews
CMTL-4 $< .55$	CMTL-4 < 9 Crews

Step 5. Repeat process for each Core Skill.

The results of the CMTL Threshold calculations above for each core skill (assuming >90% crew on-hand) are shown below in Figure 16. Figure 16 also provides a corresponding color-coded CMTL rating for each core skill.

CORE SKILLS	FORM	CAL	TERF	EXT	DM	AR	TAC	AG	NVG(HLL)	NVG(LLL)
CMTL-1	15	15	15	15	10	7	10	10	15	10
CMTL-2 (CMMR)	12	12	12	12	8	6	8	8	12	8
CMTL-3	9	9	9	9	6	5	6	6	9	6
CMTL-4	<9	<9	<9	<9	<6	<5	<6	<6	<9	<6

Figure 16. Core Model Training Level Thresholds

c. CMTL threshold calculations process based upon adjusted CMMR (ACMMR). The CMMR derived from each T/M/S T&R is based upon T/O crew manning (90-100%) but requires an adjustment for unit crew manning levels below 90%. In this way, the readiness assessment provides a T-level value for how well the unit is training the crews it possesses. The following procedure allows us to calculate ACMMR for each core skill. ACMMR is displayed as whole crews as shown in Figure 17. However, the CMTL threshold formula uses raw-ACMMR (non-rounded) in order to complete the threshold calculations. When the last step is completed, thresholds are rounded to the nearest whole number. If an even split exists between crews then the process rounds up to the next whole number.

CORE CAPABILITY PERCENTAGE				CORE SKILLS	CMMR	ACMMR
	O/H	T/O	%T/O	FAM/INST	16	14
PILOTS	34	38	0.89	INT	12	11
CREW CHIEFS	26	26	1.00	FORM	12	11
AERIAL OBS/GUN (16ACFT*1.6)	26	26	1.00	CAL	12	11
CREWS	17	19	0.89	TERF	12	11
1. If %T/O >= .90, then CMMR is used for CMTL Development				EXT	12	11
2. If %T/O < .90, then ACMMR [(%T/O)(CMMR)] is used for CMTL Development.				GTR	12	11
Excess CC shall be added to AO/AG to Maximize Total "CREWS"				AR	12	11
				CQ	12	11
				AG	8	7
				TAC	8	7
				HLL	12	11
Crew Definition: 2 Pilots, 1CC, 1AO/AG [Exceptions:FAM/INST & AR - 2Pilots only; INT-1CC/1AO/AG only; (In all cases, CC can fulfill AO/AG crew requirement.)]				LLL	8	7

Figure 17. Adjusted CMMR (Based Upon Less Than 90% Crew Manning) (CH-53E)

Step 1. Identify Unit manning level percentage 89.47%. <90% therefore ACMMR required.

Step 2. Identify CMMR by Core Skill (from the T/M/S specific T&R). The source for CMMR for each Core Skill is the T&R Core Model.

Step 3. Calculate ACMMR Baseline for each Core Skill (since unit manning level <90%)

Apply 89.47% to CMMR for each core skill to determine ACMMR.

FORM .8947 (12) = 10.74	AR .8947 (6) = 5.37
CAL .8947 (12) = 10.74	TAC .8947 (8) = 7.16
TERF .8947 (12) = 10.74	AG .8947 (8) = 7.16
EXT .8947 (12) = 10.74	NVG(HLL) .8947 (12) = 10.74
DM .8947 (8) = 7.16	NVG(LLL) .8947 (8) = 7.16

In order to calculate the ACMMR CMTL Thresholds, we apply the same formula and process we followed above but substitute core skill ACMMR Baseline results.

If 10.74 is the ACMMR (70% or T-2), then we determine ACMMR Baseline using the following formula:

If ACMMR = .70x
Then ACMMR/.70 = x

If 10.74 = .70x
Then 10.74/.7 = 15.34 (15.34 crews equates to the ACMMR Baseline for this Core Skill)

Core Skill	FORM	CAL	TERF	EXT	DM
ACMMR/.7	10.74/.7	10.74/.7	10.74/.7	10.74/.7	7.16/.7
ACMMR Baseline	15.34	15.34	15.34	15.34	10.23

Core Skill	AR	TAC	AG	NVG(HLL)	NVG(LLI)
ACMMR/.7	5.37/.7		7.16/.7	7.16/.7	10.74/.7
7.16/.7					
ACMMR Baseline	7.67	10.23	10.23	15.34	10.23

Step 4. Identify Appropriate CMTL Thresholds for each Core Skill.

Core Skill: FORM (Aircrew Manning @ 89.47%)

Use ACMMR Baseline for each core skill to determine CMTL Thresholds.

FORM: ACMMR Baseline **15.34**
 CMTL-1 $\geq .85(15.34) = 13.04$ **CMTL-1 ≥ 13**
 CMTL-2 $\geq .70(15.34) = 10.74$ **CMTL-2 ≥ 11**
 CMTL-3 $\geq .55(15.34) = 8.47$ **CMTL-3 ≥ 8**
 CMTL-4 $< .55$ **CMTL-4 < 8**

Step 5. Process repeated for each Core Skill.

Figure 18 provides the color-coded results of the ACMMR-based CMTL Threshold calculations using the above formula for each core skill.

CORE SKILLS	FAM INST	INT	FORM	CAL	TERF	EXT	GTR	AR	CQ	AG	TAC	HLL	LLL
CMTL-1	17	13	13	13	13	13	13	13	13	9	9	13	9
CMTL-2	14	11	11	11	11	11	11	11	11	7	7	11	7
CMTL-3	11	8	8	8	8	8	8	8	8	6	6	8	6
CMTL-4	<11	<8	<8	<8	<8	<8	<8	<8	<8	<6	<6	<8	<6

Figure 18. ACMMR-based CMTL Thresholds

9. Core Skills versus Core Plus Skills

a. Core Skills are specific mission-related task areas that support a community's METL and consist of like T&R events. Individuals must first "attain" and then "maintain" proficiency in core skills in order to execute the unit core capability.

b. Fleet units emphasize proficiency in 200-300 level Core Skills. Mastery of Core Skills results in highly trained personnel who contribute to the unit's overall warfighting capability and enables a combat unit to accomplish its assigned mission.

c. Each T/M/S community has determined those aviation-specific abilities that individual aircrew must maintain (through proficiency in T&R events) in order to support a unit's METL. The tables in the T&R manual are laid out as a quick reference for readers to determine both a unit's Core Skills and the events required to attain and maintain proficiency in each given Core Skill.

Note: Skills that have a high risk or low probability of execution, or are theater-specific are considered "Core Plus" skills. Core Plus training is not considered essential to achieve unit Core Competency. Core Plus events are not considered in unit readiness reporting criteria.

10. Core Skill Proficient Crews

a. As discussed above, in order for an individual to be considered proficient in a given core skill, he'll first have to attain CSP by gaining proficiency in all of the core skill events in the "Attain Core Skill Proficiency" table of the T/M/S T&R Manual, in accordance with rules set forth in the T&R Program Manual. For example, Figure 19 shows that a CH-53E Pilot must attain proficiency (simultaneous proficiency status) in events EXT-240, 241, 242, 340, 341, and 343 in order to attain EXT CSP and therefore to count towards the 12 required EXT CSP crews (24 pilots 90-100% Crew manning).

CH53E PILOT	FAM/ INST	FORM	CAL	TERF	EXT	GTR	AR	CQ	TAC	AG	HLL	LLL
T&R Event Requirements to Attain Core Skill Proficiency	200	210	220	230	240	250	260	270	290	280	202	320
	201		221	231	241	350	360	271	390	380	211	321
					242		361	272			222	322
					340		362	273			223	330
					341						224	331
					343						232	342
											233	391
											243	
											244	
											291	

Figure 19. CH-53E Pilot Attain Core Skill Proficiency

b. Figure 20 below is also extracted from the specific T/M/S T&R manual and indicates when a pilot has attained CSP, he "maintains" CSP by remaining proficient in events EXT-241, 341, and 343. The pilot must maintain this proficiency (in all 3 events) in order to continue to count toward the unit CMMR as an EXT CSP pilot. If the individual goes delinquent in any "CSP Maintain Table" event within the EXT Core Skill, he is no longer considered CSP in the EXT Core Skill.

CH53E PILOT	FAM/ INST	FORM	CAL	TERF	EXT	GTR	AR	CQ	TAC	AG	HLL	LLL
T&R Event Requirements to Maintain Core Skill Proficiency	201	210	221	231	241	350	361	273	390	280	211	321
					341		362			380	223	331
					343						233	342
											244	391
											291	

Figure 20. CH-53E Pilot Maintain Core Skill Proficiency

c. Applying the same logic to the crew chief and AO/AG syllabi, we end up with a list of individual crewmen within a given unit who are either "CSP" or "not CSP" in every Core Skill. Since a CH-53E crew is defined as 2 pilots, 1 crew chief, and an AO/AG (except in FAM/INST and AR), we end up with an aggregate number of CSP crews in each Core Skill area. Figure 21 provides an example of the number of individuals who have both attained and are maintaining proficiency in all of the events represented in their syllabus CSP Attain and Maintain tables. These individuals are then used to form ("build") CSP Crews. In this example we assume <90% O/H crew manning and therefore use ACMMR as the standard for T-2.

CORE SKILLS	FAM INST	FORM	CAL	TERF	EXT	GTR	AR	CQ	TAC	AG	HLL	LLL
CMTL-2 (>=90%0/H)	16	12	12	12	12	12	12	12	8	8	12	8
CMTL-2 (89% 0/H)	14	11	11	11	11	11	11	11	7	7	11	7
CSP PILOTS	23	24	24	24	23	18	27	15	16	16	24	16
CSP CREW CHIEFS	-	12	12	15	12	12	-	12	8	8	12	8
CSP AER OBS/GUNS	-	12	10	9	12	12	-	12	8	8	12	8
CSP CREWS	11	12	11	12	11	9	13	7	8	8	12	8
CORE SKILL CMTLs												

Figure 21. CSP Crews and Associated Unit CMT Levels (89% Manning)

d. The CMTL values noted in yellow (FAM/INST and GTR) indicate that the CMTL-3 threshold was met in terms of CSP crews but that the number of crews fell short of the CMTL-2 threshold. Also note that in the Core Skills of TERF, although only 9 AO/AGs met CSP requirements, by using the "excess" crew chiefs, the total crews were raised to 12 to match the number of CSP pilot crews.

11. Mulligan Rule. The Mulligan Rule states that, when determining the aggregate Unit T-Level for the CSP Section, the T-level Model shall "ignore" the lowest CMTL value among each reportable core skill and assign the next applicable CMTL as the Unit CSP T-level. For example, in order to be considered a T-2 unit for CSP (achieving Unit CMMR), a unit must possess the CMMR (or ACMMR) quantity of crews for all but 1 core skill. In Figure 21, the unit has met or exceeded the CMMR standard in all but 3 core skills. The system "ignores" the lowest of these (CMTL-4 in CQ) and calculates final Unit T-Level based on all other CMTL assignments in accordance with paragraph 12 below.

12. Unit Core Skill Proficiency T-Level Assignment (Aggregate of CMTL). Final Unit CSP measurement is determined by comparing the number of CSP crews with corresponding CMTL thresholds for each Core Skill and applying the Mulligan Rule to the lowest CMTL value. Once the Mulligan is taken, Unit CSP is described in terms of T-Level vice CMTL values (which are used to describe various levels of readiness within a single or multiple core skills). If the unit indicated in Figure 21 above had one more CMTL-4 Core Skill (total of two), the unit would "take the Mulligan" on the lowest but still be assigned a Unit CSP training level of T-4.

13. Operational Focus Application

a. Due to the realities of Marine Aviation, worldwide deployments and contingency operations, there will be cases where a unit cannot or should not train to certain Core Skills. Depending on the anticipated mission scenario, a commander may direct that his units train to specific Core Skill (or Core Plus skill) areas while accepting a lower level of training in others. It is the commander's call (Wing CG or MAGTF). In order to accurately report training readiness during pre-deployment or deployed operations with specific mission environments or requirements, adjustments must be made if some Core Skills are not exercised. This adjustment is applied through an "Operational Focus" modifier that is incorporated into the reporting method.

b. Figure 22 shows the potential readiness reporting (T-Level) impact of a unit that does not train to the Core Skill areas of, for example, GTR and CQ due to mission area specific requirements that do not demand proficiency in these particular core skills. Their 7 CSP crews "built" in each Core Skill make them CMTL-4 in both of these Core Skills. One is thrown out via the Mulligan Rule, but the other CMTL value remains. This would make their overall Unit CSP T-level a value of T-4, with no means to account for their specific mission requirements.

c. The low numbers of crews built may be due to mission considerations for exercising other Core Skills above these. The inability to account for mission considerations may, from reporting perspective, result in an artificial decrease in T-Level that may not be significant in the mission environment at the time of reporting.

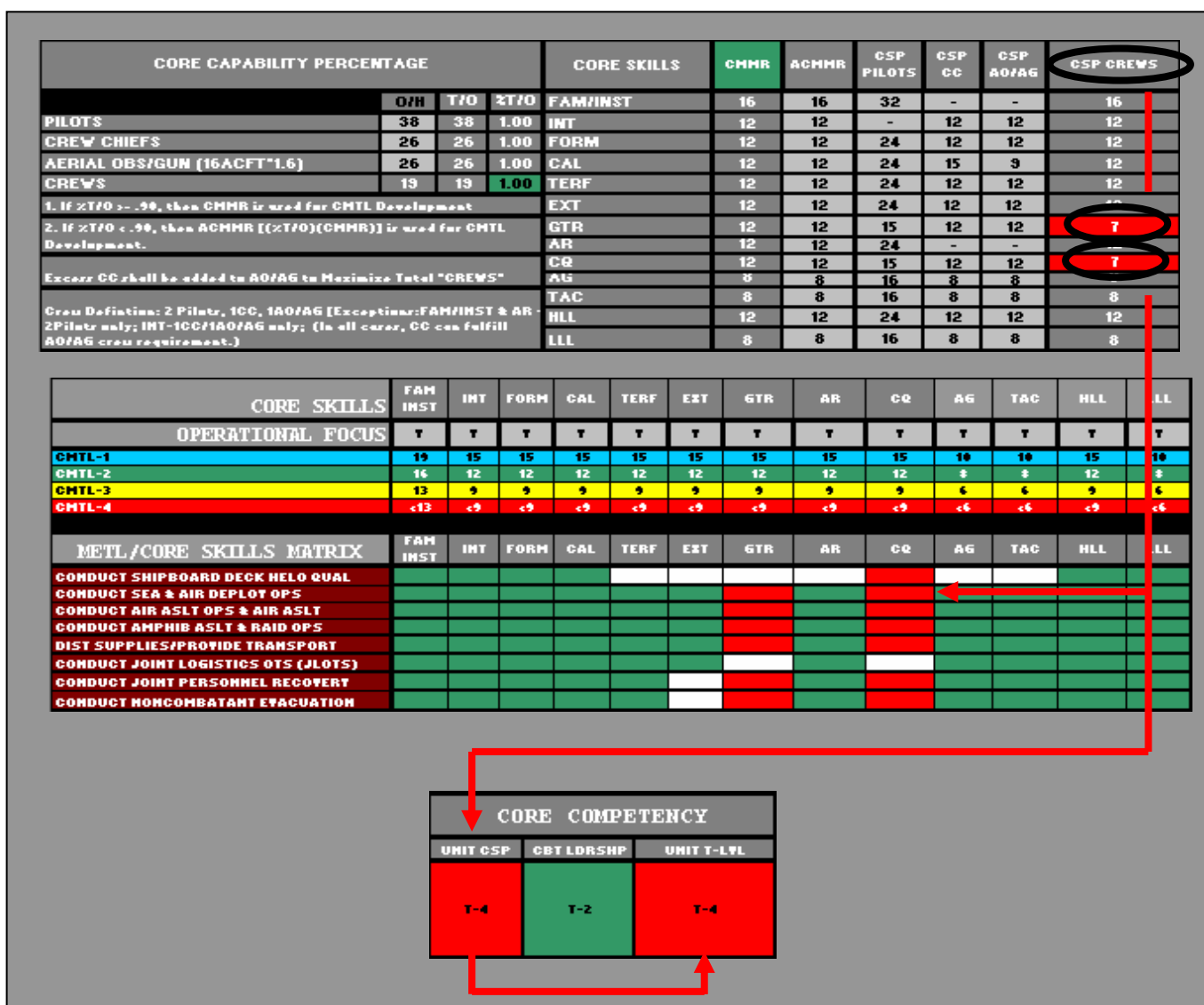


Figure 22. Reduced CSP T-Level due to Deployed Mission Oriented Training

14. Operational Focus Activation. Several measurements and displays in the model are adjusted to account for a decision to "opt out" of training to one or more core skills. First, the unit enters an "N" into the Deployed Focus section under the appropriate Core Skills. This indicates that, due to operational mission specific considerations, the unit is not training to these particular Core Skills and that these Core Skills shall not be considered in the Unit Core Skills Proficiency T-Level analysis. If an "N" is entered into the Deployed Focus Section, the system appends an "X" to the final Unit CSP value in the Core Competency Section. The "X" indicates that a comment must be made in the commanding officer's comment portion of the SORTS report that the unit has "opted out" of training to 1 or more Core Skills due to mission requirements. The commander shall explain his reasoning. In Figure 23, note that the unit has "opted out" of training to both GTR and CQ and

the resultant T-Level value for Unit CSP is based on total crews built in all other reportable Core Skills.

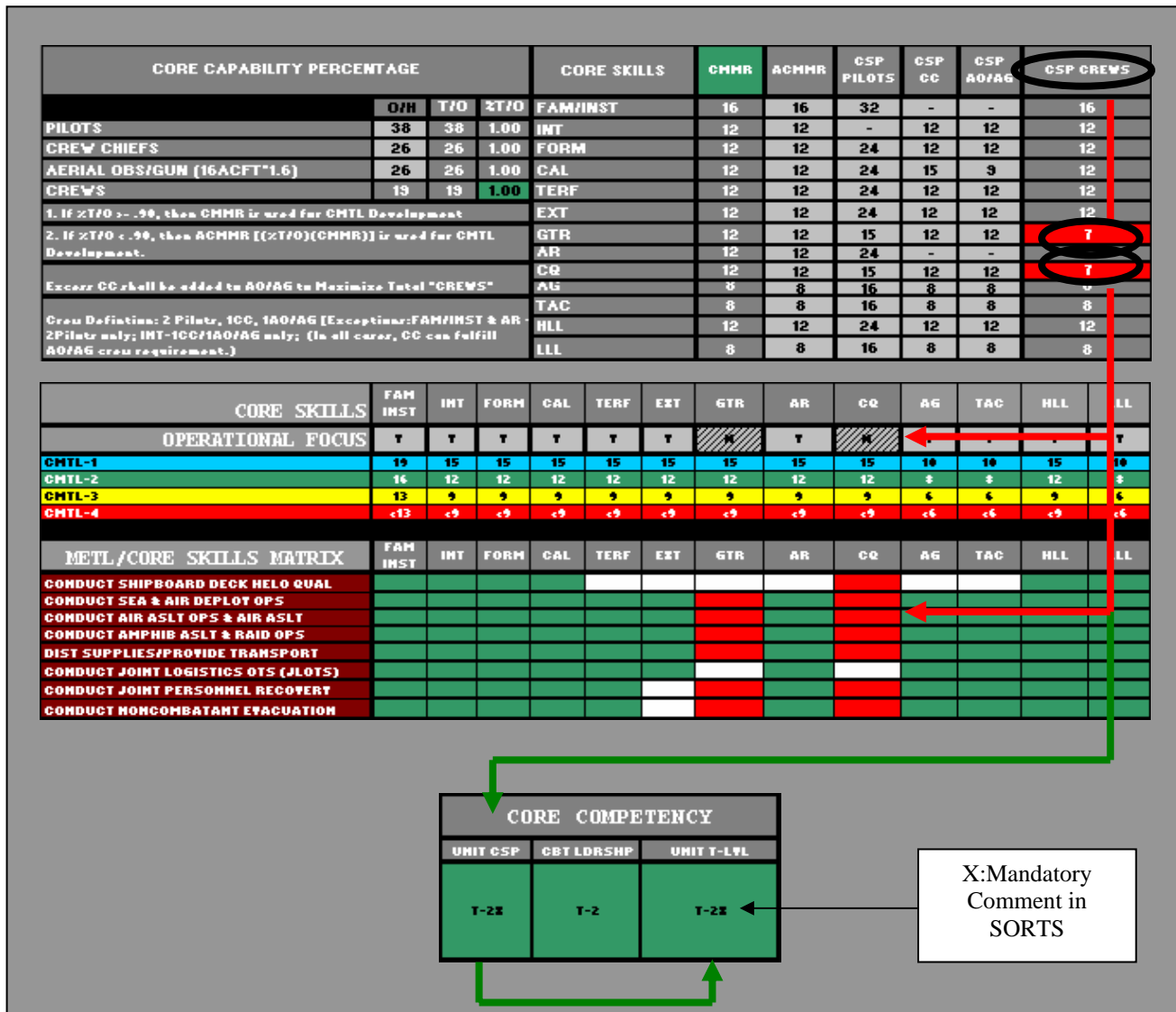


Figure 23. Deployed Focus "Opt Out" Entry Results

15. **Authority to Grant Operational Focus.** The granting authority for entering an "N" into the Operational Focus Section for specific Core Skill training shall rest at the commanding general or MAGTF Commander level. Units may opt out of Core Skill training as authorized by the commander. Unit commanders shall comment on the reasons for the "opt out" decision in unit commander's mandatory comments.

16. Combat Leadership

a. Marine Aviation demands effective Combat Leaders. In terms of Unit Core Competency, Combat Leadership is defined in terms of minimum numbers of tactical leaders certified by T&R standards and designated in writing by unit commanding officers.

(1) Combat Leadership Designations. Figure 24 below is extracted from the T/M/S T&R Manual and indicates that a CH-53E squadron must possess at least the indicated minimum number of individuals with the following Combat Leadership designations to be considered Core Competent. These numbers define the CMMR for Combat Leadership.

CH-53E Squadron	
DESIGNATION	Pilots
HAC	16
SEC LDR	9
DIV LDR	6
FLT LDR	5
AMC	4

Figure 24. Squadron Combat Leadership CMMR Requirement

(2) Core Capability Percentage. Core Capability Percentage notes apply to the Combat Leadership Section in the same manner as they apply to CSP CMMR. If the percentage T/O manning is below 90%, that percentage value is multiplied with the Combat Leadership CMMR standard to arrive at the adjusted CMMR (ACMMR) standard. Figure 25 displays the CMMR for Combat Leadership given 90-100% crew manning.

CORE CAPABILITY PERCENTAGE			
	O/H	T/O	T/O
PILOTS	38	38	1.00
CREW CHIEFS	26	26	1.00
AERIAL OBS/GUN	26	26	1.00
CREWS	19	19	1.00
1. If $T/O \geq .90$, then CMMR is used for CMTL Development			
2. If $T/O < .90$, then $ACMMR [(T/O)(CMMR)]$ is used for CMTL Development.			
Crew: 2 Pilots; 1 CC, 1AOG (Excess CC shall be added to AOG to Maximize Total Crews)			

COMBAT LEADER	CMMR	ACMMR	CBT LDRS BUILT
AMC	4	4.00	4
FLT LD	5	5.00	5
DIV LD	6	6.00	6
SEC LD	9	9.00	9
HAC	16	16.00	16

CORE COMPETENCY		
UNIT CSP	CBT LDRSHP	UNIT T-LVL
T-2	T-2	T-2

Figure 25. Combat Leadership CMMR Values Given 90-100% Crew Manning

(3) If crew manning drops below the 90% standard as found in the T&R Core Capability Statement, then CMMR is adjusted accordingly. The ACMMR calculation logic is activated and CMMR adjusted based upon the total number of assigned crews (Figure 26).

CORE CAPABILITY PERCENTAGE			
	O/H	T/O	Z/T/O
PILOTS	34	38	0.89
CREW CHIEFS	26	26	1.00
AERIAL OBS/GUN	26	26	1.00
CREWS	17	17	0.89
1. If Z/T/O >= .90, then CMMR is used for CMTL Development 2. If Z/T/O < .90, then ACMMR [(Z/T/O)(CMMR)] is used for CMTL Development. Crew: 2 Pilots; 1 CC, 1AOG (Excess CC shall be added to AO/AG to Maximize Total Crews)			

COMBAT LEADERS	CMMR	ACMMR	CBT LDRS BUILT
AMC	4	3.58	4
FLT LD	5	4.47	5
DIV LD	6	5.37	6
SEC LD	9	8.05	9
TOTAL	10	14.32	16

CORE COMPETENCY		
UNIT CSP	CBT LDRSHP	UNIT T-LVL
T-2	T-2	T-2

Figure 26. Combat Leadership ACMMR Values Given <90% Crew Manning

b. ACMMR values are calculated using the CMTL formula applied to Combat Leadership. These values are rounded to the nearest whole number of Combat Leaders. For a CH-53E unit with a total crew percentage of 89.47%, the CMMR-standard is adjusted considering the numbers of crews assigned to the unit. Figure 26 above also demonstrates that low CMMR values (4 and below) are not impacted as greatly as high CMMR values when adjustments in crew manning percentages occur.

c. Combat Leaders Built. The number of Combat Leaders "built" by the unit will be pulled from the M-SHARP system by accessing the Qualifications and Designations portion of the system.

d. Combat Leadership CMTL Threshold Assignment. Combat Leadership CMTLs are calculated in the same manner as CSP CMTL Threshold calculations.

e. METLS and Combat Leadership Matrix. Combat Leadership skills span the entire range of METs and the resulting "matrix" shows Combat Leadership CMTL values applying across all METs, Figure 27.

METL/COMBAT LEADERSHIP	AMC	FLT LD	DIV LD	SEC LD	HAC
METLS					
CONDUCT SHIPBOARD DECK HELO QUAL					
CONDUCT SEA & AIR DEPLOY OPS					
CONDUCT AIR ASLT OPS & AIR ASLT					
CONDUCT AMPHIB ASLT & RAID OPS					
DIST SUPPLIES/PROVIDE TRANSPORT					
CONDUCT JOINT LOGISTICS OPS (JLOTS)					
CONDUCT JOINT PERSONNEL RECOVERY					
CONDUCT NONCOMBATANT EVACUATION					

Figure 27. METL/Combat Leadership Matrix

17. Core Competency Section

a. The Core Competency Section is provided to summarize the CMTL results based upon aggregate CSP CMTLs (Unit CSP) and Combat Leadership CMTLs. As discussed earlier, both the Mulligan Rule and the Operational Focus Rule are

applied to the CSP Section in order to arrive at a Unit CSP T-Level value. The Unit CSP T-Level value is compared to the final Unit Combat Leadership T-Level value. The Combat Leadership Section does not employ either the Mulligan Rule or the Operational Focus Rule. Figure 28 indicates the calculated T-Level value for Combat Leadership as T-3 due to a shortage of Section Leads (7 out of the CMMR required 9 [90% or more T/O Manning]).

COMBAT LEADERSHIP				
AMC	FLT LD	DIV LD	SEC LD	HAC
4	5	6	9	16
5	6	7	11	19
4	5	6	9	16
3	4	5	7	13
<3	<4	<5	<7	<13
AMC	FLT LD	DIV LD	SEC LD	HAC
COMBAT LEADERS	CMMR	ACMMR	CBT LDRS BUILT	
AMC	4	4.00	4	
FLT LD	5	5.00	5	
DIV LD	6	6.00	6	
SEC LD	9	9.00	7	
HAC	16	16.00	16	

Figure 28. Combat Leadership (Section Lead Shortage)

b. The overall Unit T-level is the lower of either the CSP or the Combat Leadership T-Level value. In the above example, the Unit CSP T-Level value was T-2X. Due to the Section Lead shortage, the Unit Combat Leadership T-Level value was T-3. Therefore, in this instance the Unit overall T-Level value is T-3X reflecting the Section Lead shortage and indicating the unit had opted out of training to one or more Core Skills, requiring commander comment (Figure 29).

CORE COMPETENCY		
UNIT CSP	CBT LDRSHIP	UNIT T-LVL
T-2X	T-3	T-3X

Figure 29. Unit Core Competency

18. Mandatory Subjective Comments

a. Commander's must make subjective comments in order to "fill in the holes" since a single alphanumeric designation will rarely tell the whole story. The following delineates SORTS mandatory comment areas:

(1) Commanders shall comment on any instances where CMMR has been adjusted to account for crew O/H manning. The comment shall be made in the context of the reduced crew manning impact on the unit's capacity to fulfill its "fully manned" core capability sortie generation standard. For example, a CH-53E has an O/H crew manning of 14 crews of 19 (T/O). According to the Core Capability Statement in the T&R, the unit should be able to produce 27 sorties if crew manning is equal to or above 90% T/O (and >70% FMC). Since the crew manning level (14/19) is 74%, ACMMR is used to determine the requisite number of CSP crews. Further, the unit should be able to generate $(.74 \times 27) = 20$ sorties for the commander.

(2) Commanders shall comment on all Core Skills that have been "opted out" in accordance with the granting authority's direction.

(3) Commanders shall comment on their unit's 3 lowest degraders with respect to the both CSP and Combat Leadership Sections.

(4) Commander's shall comment on any critical MOS's including Pilots and other aircrew effected in the "Core Capability Percentage (Total Crews) Section.

b. The Unit T-Level value shall be input into the monthly SORTS report in accordance with the USMC SORTS directive. Further rules regarding Marine Aviation implementation of this method for calculating T-level shall be forthcoming in the update of MCO P3000.13D (USMC Status of Resources and Training System [SORTS]). The update shall be designated MCO P3000.13E.

APPENDIX E

CORE COMPETENCY RESOURCE MODEL (CCRM) GUIDELINES

1. General. The Core Competency Resource Model (CCRM) identifies the external resources needed to attain and maintain a desired level of readiness for a unit. The CCRM, accredited by the Chief of Naval Operations and the Commandant of the Marine Corps was primarily developed as a Flight Hour Model to support the Flight Hour Program but it has been expanded and will include the following external resources: ordnance, indirect fire assets, ranges, targets, aggressor air, external loads, and ground assets (Helicopter Support Teams, convoys, radar support etc.) At the HQMC level the CCRM is utilized a budgetary tool to justify the specific resources needed to support a level of readiness based upon training requirements for each platform or community. At the unit level it is utilized to complement the SBTP and to identify resources need to train the unit.

2. CCRM

a. The CCRM is a linear, bottom-up, qualitative model that identifies the resources required to attain and maintain a desired level of readiness based upon T&R Core Skill Proficiency (CSP) training requirements and the Core Model Minimum Requirement (CMMR) per unit. At the HQMC level it reflects a 12 month period of time (Oct-Sep) out of a normal 36 month tour for personnel. At the squadron/unit level it can be used to generate individual and unit requirements based upon CSP and CMMR.

b. Fixed inputs - Phases of Training. These inputs are incorporated into the models by the Aviation Training Branch. These inputs are derived from individual T/M/S T&R Manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). The Phases of training include:

(1) Core Skill events (200-400 level). All Core Skill Basic, Core Skill Advanced, and Core Plus training events with corresponding refly intervals.

(2) Instructor Training events (500 level). These include events contained within T/M/S T&R and the MAWTS-1 Course Catalog (ASP). All work-up and certification events are included as well as flight hours/sorties required to train and designate a WTI at MAWTS-1 during the semi-annual courses.

(3) Combat Leadership training (600 level). These include both the work-up and certification events required for Combat Leadership designations.

(4) Requirements, Qualifications, and Designations (600 level). These include annual training requirements contained within OPNAVINST 3710.7 (NATOPS and Instrument Evaluations) and other requirements.

c. Fixed inputs - Individual Events. These inputs are incorporated into the models by the Aviation Training Branch. These inputs are derived from individual T/M/S T&R Manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). Individual event resources required per event/occurrence include:

(1) Sortie duration - Established by HQMC (APP).

(2) Device - Includes flight in aircraft, simulator flight, or training device with refly interval.

- (3) Ordnance - Includes quantity and type with allowable substitutes.
- (4) Ranges - Specific range requirements.
- (5) Targets - Quantity and type of targets requirement.
- (6) Indirect Fire Support - Quantity and type of indirect fire assets required.
- (7) Aggressor Air - Quantity and type of aggressor air required.
- (8) External Load - Type and weight of external load required.
- (9) Helicopter Support Team (HST) - Type of HST required.
- (10) Convoy Support - Type of convoy support required.
- (11) Other - Those other external (not organic to the unit) resources that are required to accomplish event training.

d. Variable Inputs. These inputs include the number and type of crewmembers assigned to various Programs of Instruction (POIs), the number of crewmembers that will undergo Instructor and Combat Leadership training. These inputs are done both at the HQMC level and the unit level. Inputs at the HQMC level will identify T/M/S resource requirements and at the unit level inputs may assist in developing individual unit or event requirements. See the matrix below for sample input.

Instructor Training

Combat/Flight Leadership

POI input

Crewmembers maintaining
Core skill Proficiency

